AMERICAN AGRICULTURIST

For the Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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TRAVEL ON "THE PLAINS"—A STAMPEDE.—*Designed and Engraved for the American Agriculturist.*

As the railroad in the older States does away with much of the picturesqueness of stage coach travel, it in the Far West breaks up a whole system of transportation with its strange methods and peculiar people. The traffic that was in former years carried on between "the States," and Mexico, by the way of Missouri, was a most peculiar one. Those who directed it were men of enterprise as well as of capital. The outfit of the train itself, comprising from 25 to 100 wagons, of a build not seen elsewhere, each drawn by six mules, with a complement of spare animals, required a large investment. The train was loaded with every possible variety of merchandise that would be likely to meet with a sale in Mexico, and when once loaded up with its full complement of men, required for its command a person of as varied resources, though of a different kind, as is needed to take charge of a ship with an assorted cargo. With such a train there was a sufficient supply of spare horses and mules, to supply any deficiency caused by the breaking down of the animals ridden by the various attendants of the train, or of those at work in the wagons. These spare animals made quite a herd, and in addition to these, as American horses brought high prices in Mexico, it was not unusual for a number of these to be driven along for the purpose of traffic. This herd of loose animals was under the care of several herders, whose business was to keep them together on the road, and when the train was in camp, they also looked after the whole number of animals while they were grazing. The herders were almost, without exception, Mexicans, whose skill in the use of the lasso, among other qualifications, especially fitted them for the work. In many localities the table lands are intersected by deep ravines, which allow those familiar with the ground to approach undiscovered, and surprise the herders. The artist shows such a stampede in the above engraving. The appearance of a few yelling Indians, at once paralyzes the Mexican herders, and frightens the animals, which soon start into a run and the owner never hears of them again, as the writer knows from painful experience. It has happened, that not only have the loose animals of a train been stampeded, but sometimes the whole number, when turned out to graze, have been run off during the night, and appropriated by marauders, leaving their owner as helpless as the captain of a stranded ship.

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An Unprecedented Speculation is now going on in wheat, corn, lard, etc. The ways of the speculators, the crop reports, and how they are manipulated, the prospects of prices, etc., are explained to the comprehension of farmers and others on page 378. The marked contrast in the price of wheat, in August, 1880 and 1881, is shown in a table in our Market Report.

AMERICAN AGRICULTURIST.

NEW YORK, SEPTEMBER, 1881.

Suggestions of and for the Season.

The leading farm work for September, in many parts of the United States, is the sowing of the fall crops. This involves putting the soil in thorough readiness, and the selection, and sowing of the seed. There are a number of essentials in the proper preparation of the seed bed, all of which should obtain in every field devoted to a grain crop. The soil should be rich, either by the accumulated fertility of long years of undisturbed vegetation—the virgin soil, or made so by the addition of a fertilizer in the form of barn-yard dung or the so-called "chemical manures." Of these two, that made in the barn-yard and stable is to be the first chosen, and the superphosphates and other "salts" only used as a supplement to the barn-yard manure, or in cases where the latter is not to be obtained. Next to richness should come a fine tilth. This requires that the soil be plowed in a thorough manner, and afterwards stirred with the harrow or some other cultivator—in fact with any implement, until the lumps are reduced, and the whole soil is in a fine, mellow state. The roller described and figured in the Notes for last month, will aid greatly in bringing the soil to a proper tilth for the reception of the seed. A cheaper, and a very effective implement may be made as shown in figure 1. It consists of a number of small logs, fastened together by a chain which runs through holes bored in the logs. The logs are held apart about half their diameters by keys placed in the links of the chain. The clod crusher may be drawn even, or the clevis for attaching the horses may be at one side, in which case the earth will be moved sidewise to some extend. A single, though larger, log may be arranged in the same way and used for the same purpose, as shown in figure 2. The importance of the mellowness of the soil can not be too strongly insisted upon, as without it the seeds do not come into intimate contact with the particles of earth, and therefore cannot make a good start, and many of them will not grow at all. With a good supply of plant food, in a condition to be readily taken up by the young plants, the next thing is to select the seed, and sow it properly. To put the matter of selection in a nut shell—sow the best seed to be found, even if it costs double that of the ordinary sort. When the fact becomes more thoroughly known that of two kinds of grain, for example, under identical conditions, one will yield twice as much as the other, more attention will be given to a proper selection of seed. It is not for us to say which variety of wheat or other grain is the best; that depends upon local circumstances and conditions, and each farmer must, after careful study, decide such matters for himself. The "Clawson" wheat is at present taking a high rank for yield and quality in many localities. It may not be the best for all places. The sowing should always be done with a drill, except when the stumps and stones of new ground prevent the passage of the implement. The drill secures a uniform depth to all the seed, and therefore better conditions for growth. Six pecks of good, plump wheat (and no other should be used as seed), is sufficient per acre, when a drill is employed. Were it not for the Hessian Fly, early sowing of wheat should be recommended in all cases. Late sowing is a disadvantage in itself, as the plants make a smaller growth before winter sets in. The richer the soil the later the sowing may be done with safety.

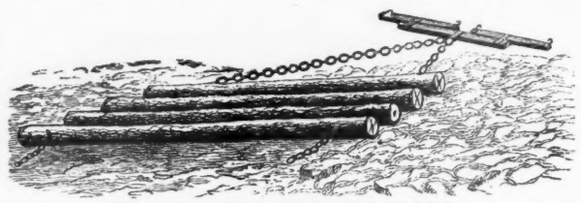


Fig. 1.—A CLOD CRUSHER MADE OF LOGS.

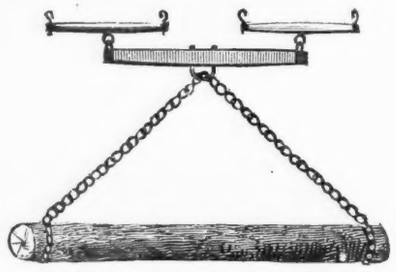


Fig. 2.—A SINGLE LOG CLOD CRUSHER.

After the sowing there is very little more to be done to the fall grain field. If the land is not thoroughly drained, water furrows may be necessary for the rapid removal of the excess of water of heavy rains. For this purpose see the "Ditching Plow" on page 364. Grass seed may be sown a few weeks after the grain, so that the Timothy, if used, may not get too large, and retard the growth of the grain. Clover seed may be sown upon the snow in spring.

The turnips should be thinned and the rows kept free from weeds. One good root every ten inches is far better than two in the same space. The early sown beets and mangels may be harvested the last of this month; if left until late they become hollow and stringy. The tops make good feed for the cows. Corn should be cut so soon as it is ready, as the stalks will be much more valuable as fodder than if left until they either dry upon the hill or are struck with the frost. A careful reading of the article on "Cutting Fodder Corn," page 361, is recommended, as it applies equally to all kinds of corn. Early cutting also helps to push the fall work forward, and often saves cold fingers in late husking. Cut as soon as the grain is well glazed. A shocking-horse to aid in cutting the corn is shown on page 360. The old style which has done so much good service deserves frequent mention, and is shown again in figure 3.

Good bands to be used in tying the shocks saves much trouble and loss. If the stalks are too brittle, bands of twisted straw may be used; but best of all, if at hand, are the long sprouts of the osier willow. Potatoes should be dug as soon as their growth ceases, otherwise a heavy rain may start the tubers into growth, or cause them to rot. The beetles must be kept from the late crop.

The Buckwheat crop is quickly injured by

neglect, it should be cut before a heavy frost comes, and as the grain shells so easily, the harvesting should be done in the morning while the dew is on. After lying for a few days to cure, rake the crop, when moist, into bunches, and set it up like corn shocks. After thrashing spread out the grain on the barn floor or elsewhere, as it will heat and spoil if stored at once in deep bins.

Notes on Farm Stock.

During the hurry of sowing the fall crop, and harvesting those still upon the ground, the live stock should not be neglected. The pastures are getting old and need "piecing out," by a quantity of fodder, in the shape of roots, corn stalks, or some more concentrated food. Especially important it is for the animals to have an abundance of fresh water when the pastures do not afford the juicy herbage of spring and early summer. Horses will be hard worked and therefore need an abundance of good, substantial food. After a day's work the coat may be sponged with clean water, with a few drops of carbolic acid in it. This will help much to keep the skin clean, and in a healthful condition, and avoid the disagreeable smell that too frequently comes from horses in warm weather. A run in the pasture during the night is acceptable to the horses, but the regular feed should be given them before they are turned out at night. All horse owners are interested in the feet of their animals. We therefore take pleasure in referring the reader to the article on "Horse Shoeing," by Dr. Slade, found on page 362. Colts should be fed a few oats each day and a shade provided for them in the pasture, if there are no trees to serve this purpose. Cows giving milk will need liberal feeding; if allowed to "fall off" now, the flow of milk can not be brought up again before cold weather sets in. A field of fodder corn will now be most profitable, and with this green fodder a quantity of bran or meal can be fed with advantage. See also that there is an abundant supply of fresh water for the dairy. The sheep are excellent for picking up the "scatterings" from most crops, and the flock should be turned into the harvested

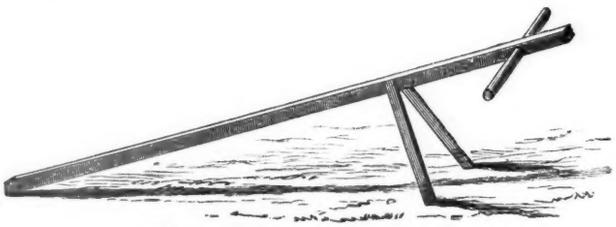


Fig. 3.—A HORSE FOR SHOCKING CORN.

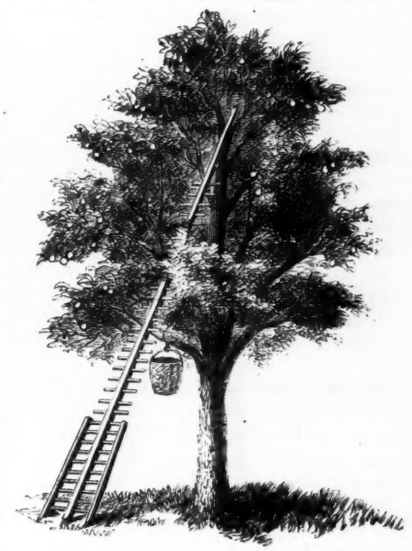
fields to do this work. Only those ewes that are to bear early lambs should receive the ram this month, and they should have special care that they may begin the winter in good condition. The character of the lambs depends largely upon the ram, therefore only the best should be used. It is better to purchase a first-class ram, than to use an inferior one that is in the flock. Pigs and poultry do not thrive in close confinement during hot weather. They need space for free movement, an abundance of fresh air and good wholesome food. The pens and roosts need to be frequently looked to, that they may be free from all vermin. A good way to cleanse is to give the woodwork a thorough coating of white wash, either applied with a force pump or dashed on with a large brush, until every part, floor and all, is completely covered with the white wash.

Notes on Orchard and Garden Work.

This is the season of the year for the ingathering of the fruits of the Orchard and Garden. More than this, it is the time of the various fairs, and the wide-awake fruit grower and gardener may now lay in a stock of information that will be difficult to get in any other time or way. Almost every one can go to at least one fair, and most persons can visit several; nearly all can take something that will interest others, and help to make the exhibition more complete. There are those who go simply to see the crowd, and such do not get all the good that is set before them. They may even grumble at the things on exhibition, and boast that they have better at home, at the same time making an exhibition of their own lack of sympathy with all that is progressing. Every one should look upon the fair as a school in which all are both teachers and scholars, a place for giving information upon how and what to do this and that, and in turn receiving valuable hints on the same or other topics. With such a spirit, even a small fair can be made a great success. The knowledge to be gained is much more than the money value of the prize that is to be obtained. It is a striving after a better system of culture, a superior variety of fruit and flower, etc., rather than the dollars and cents in the prize awarded; the latter is but a means to an end, and that end is more knowledge and a wiser class of people.

Orchard and Nursery.

For many reasons fall planting is preferable to spring. The soil now is warm and mellow, and there is more time at this season, and the work can be done without the hurry that too frequently seems necessary during the busy weeks of spring. The trees become established and are ready for an earlier start, and are therefore better able to withstand the drouth that may come in midsummer. After the trees are planted, a mound of earth 12 to 15 inches high, thrown up around the trunk, will keep the water from settling about the roots of the tree, and also serve as a support against the winter winds, and protect the base from the attacks of mice. If the leaves are stripped from the nursery trees, they may be set out some weeks earlier than otherwise. There is no harm done to the tree by the removal of the leaves, provided they have finished their work, and are simply waiting for the frost and winds of autumn to take them off. If left on there is danger of fermentation in the package while being transported, and after the trees are planted they cause an evaporation and demand for water that it is difficult for the newly placed roots to supply. Even if trees are to be set in the spring, the ground should be prepared for them now, and all arrangements made for their prompt arrival from the nursery as soon as needed for planting. The quincunx method, by which each tree stands at the corner of an equal-sided triangle, and also at the center and equally distant from six surrounding trees, is recommended for all orchards of small-sized trees. It gives a more uniform space on all sides of the tree, as each tree is surrounded by a circle of six trees, instead of being at one corner of a square. This is the off year for apples, and all the more care should be taken in picking, sorting, packing, etc. The figure shows a very simple ladder, which may be used upon larger trees, and is



A HANDY FRUIT LADDER.

to be preferred to the ordinary kind, as it can be set among the branches with greater ease. The construction is easily understood from the engraving. The method of using deep fruit baskets with a hook attached is also shown in the figure. The use of a common grain bag as a receptacle for picking fruit has some important advantages. One side of the mouth of the bag is tied to the corresponding corner at the bottom, first putting an apple in the corner to hold the string from slipping off. The bag is then hung over the shoulder with the mouth in front. The picker has both hands free and can empty the bag by lowering it into the barrel without bruising the fruit. All but the poorest apples will be marketable, and such should be made into cider. Much fruit of second quality can be saved by drying. Excellent dryers are now made, which at small cost turn out a handsome light-colored product vastly superior to that made in the old way of exposing to the sun, air, and various insects. If fruit is to be dried in this manner, or on an ordinary stove, it should be protected from insects by means of netting. Budding is an important work at this season, the precise time depending on the stock. The bark must lift readily, and the buds should be well matured. After the buds show that they have "taken," the ties should be removed by cutting them.

The Fruit Garden.

The old strawberry beds should be kept clean of weeds, removing all runners not needed for new plants. New beds may be set this month, but there is very little gained in point of time over spring planting unless "potted plants" are used. These are plants from runners which have struck root in pots of earth, set under them; by removing the earth with the plant there is no checking of growth, and a fair crop of fruit may be expected the following summer. There is a

gain in setting ordinary strawberry plants in the fall in that the soil is in better condition, and that the garden and other work is not so pressing. Blackberries and raspberries start very early in the spring, and should be planted in the fall. If it is desired to propagate the black caps, and a few varieties of the red, the canes must be bent down and earth placed on the tips, which then will soon strike root. Most red raspberries and blackberries may be propagated readily by "suckers," or shoots which spring from below ground. The currants and gooseberries may be pruned as soon as the leaves are ready to fall. Propagation is done by cuttings planted in rows with one bud above the surface. If put in early, they will form roots before winter sets in. The gathering of the grapes is an important operation, and is best done with the scissors made for the purpose; this avoids handling the fruit, which, by removing the "bloom," injures the appearance and therefore the sale. The use of trays for holding the fruit for curing, and the packing of grapes are fully treated elsewhere on this page.

The Kitchen and Market Garden.

The late weeds will thrive vigorously at this season, and hoeing and raking should not cease until frosts put a stop to their growth. When a crop is removed, the ground should be cleaned of all refuse, and that which is worthless for the pigs, etc., should be burned, especially weeds with ripened seeds. As the cooler weather comes, the late crops will make a rapid growth. The celery will need a frequent stirring of the earth. If some is wanted for early use, the leaves can be straightened up and the earth drawn close about them. The banking for winter use need not be done until next month. The late plantings of cabbage and cauliflower may be stimulated by an application of guano, or other concentrated and quick-acting manure. The seeds for the plants that are to be kept through the winter in cold frames should be sown about the middle of this month, for localities with the climate of New York City. The soil should be rich and mellow. No cucumbers, except a few for seed, should be allowed to reach maturity, as they exhaust the plants. The fruit for pickles should be gathered every day. Martynias must be gathered while still very tender and brittle, else they will be worthless. The sweet potato vines should be kept from striking roots at the joints. The larger potatoes may be pulled from the rows, leaving the small ones to continue their growth. When the tomatoes are most abundant, the supply of catsup should be made. The fruit for green pickles should be gathered before the frosts come. Some of the later turnips may still be sown, but the soil should be rich, and the hoe frequently used. Seeds should never be saved from the "last picking" of a crop. The best, or none, should be the rule. It is cheaper to buy seeds from those who grow the best than to save the poor.

Flower Garden and Lawn.

The show of out-door flowers should now be at its best. The rich foliage and bright flowers of the cannas and the bloom of the geraniums should make the garden brilliant. The dahlias will need to be supported by stakes, or else the heavy blossoms will break down the spreading branches at just the time when the plants are at the best. Old blooms from these and other plants should be removed. The chrysantheums are among the latest of flowers, and for this, as well as their real beauty, they should receive proper attention. If the plants are potted they can be kept in the greenhouse or window for some weeks, making a beautiful show. The cooler weather will start the grass of the lawn into more vigorous growth, and the lawn mower will need to be frequently used. Annual grasses may spring up in the thinner spots, and if not allowed to form seeds, but little harm is done at this late season. New lawns may be made now. If the season is favorable, fall sowing is preferred to that of spring, for the grass gets a start before winter comes.

Greenhouse and Window Plants.

The time for taking in the more tender plants will be soon at hand. Everything about the greenhouse should be in readiness. Soil and pots should be at hand in good supply. New sand should be put on the shelves to avoid insect pests. It is much better to bring plants in rather early than to let them be injured by being too late out of doors. Slight frosts may be guarded against by providing a cover for the choicest plants in the form of sheets, or even newspapers. Roses, carnations, etc., that are to flower in the winter, need to be potted and set in a cool place for awhile. Hanging baskets may now be filled with plants, and hung out-of-doors until the weather gets too cool for them.

Preserving Grapes for Winter.

As autumn approaches, we receive a number of inquiries as to the method of preserving grapes for winter use. It is not generally understood that there is as much difference in grapes, with respect to their keeping, as there is with other fruits. No one would expect to keep Early Harvest apples or Bartlett pears for the holidays, and it is so with the most generally cultivated grape, the Concord; it can not be made to keep in good condition long after it is fairly ripe. With other varieties it is different. There are some localities where that grand old grape, the Catawba, can still be cultivated with success, and, where this is the case, one need hardly to look for a better variety. The Isabella still succeeds in some places, and is a fair keeper. Better than either, if not the best of all grapes, the Iona gives good crops in some places, as does the Diana. Where either of these, the Isabella, Catawba, Iona, or Diana, can be grown, there is no difficulty in keeping them until the first of the New Year, or later. The grapes are allowed to ripen fully; they are picked and placed in shallow trays, in which they remain in an airy room to "cure." The operation of curing consists merely in a sort of wilting, by which the skin becomes toughened, and will not break when the fruit is packed. The clusters, when properly "cured," are packed in boxes, usually of three or five pounds each. The bottom of the box is opened, the larger clusters laid in carefully, and smaller bunches packed in upon them in such a manner that it will require a moderate pressure to bring the cover (or, properly, the bottom), of the box to its place, where it is nailed down. The pressure used is such that when the top of the box is opened, the grapes next to it are found to be somewhat flattened. The fruit must be pressed in such a manner that it can not shake in travel, and this can only be done with grapes the skin of which has been toughened by being properly cured. If clusters were placed in the box as they come from the vines, and subjected to the needed pressure, the skin would crack around the stems, liberating the juice, and the whole would soon pass into decay. Towards Christmas and New Year's, many tons of the varieties we have named come to the New York market in excellent condition. New varieties of grapes, of great excellence, have recently been introduced, but we have yet to learn as to their keeping qualities. With the Concord and related varieties, the skin is too tender to allow of long keeping, and it does not seem to toughen in the curing process. Still, with these, the season for home use may be considerably prolonged. The late Mr. Knox found that he could keep the Concord for some time by placing the thoroughly ripened clusters in baskets or boxes, with the leaves of the vine below and between them. We do not know how long this will keep these grapes, but we saw some in excellent condition several weeks after the harvest was over. Those who set grape-vines should be aware that no one variety will meet every requirement, and that the earlier the variety, the less likely it will be to prove a good keeper.

Preparing for the Fair.

So far as our experience goes, and it has not been limited, the success of a fair, especially of a local one, depends mainly upon the work of a few—often one—very enthusiastic and hard-working persons. We believe so thoroughly in fairs, and especially in the local ones—county in preference to State fairs, and town fairs rather than those of the county, that we would increase this number of workers, and have every one within the district included by the fair feel that he is a committee of one charged to make it a success. We went to a country fair several years ago, at which there was a display of vegetables that would have been very creditable, had they been properly exhibited. Laid out on old tables, the boards of which had been weather-worn for many years, they made a most sorry appearance. Supposing that the exhibitor had taken a lot of 3-inch stuff, tacked together some frames, placed some freshly-cut grass in each, and on these laid his beets, turnips, etc., in regular order. Every one would then have stopped to look at them, and have examined the card of the exhibitor. This illustrates a common trouble at our local fairs; people bring things, which, not been properly exhibited, are unnoticed, and as a consequence, they do not bring anything the next year. It should be the business of some one at every fair to look out for these details. Many a good housewife robs her garden to make up a large decorative bouquet, and when she reaches the fair, finds no place to put it. It can only be laid down somewhere, probably in the sun, no one to take charge of it or care for it. It is the neglect of these little things that discourages contributors. Take such a bouquet, for example, a proper person in charge, if he could not find a proper vase to hold water for it, he would take some newspapers, make a big ball of mud around the stems, bind the papers around the ball, and the bouquet could stand erect on its mud base, and remain fresh for days. But our intention was to suggest preparing for the decoration of the fair. Most

county and other societies have permanent buildings, especially for household productions and for flowers and vegetables. Much may be done in the way of decorating these rooms if it be only taken in hand in time. Those who have in their gardens cannas, castor oil plants, large coleuses, or other decorative plants that can be spared, can do much toward decorating, but they must begin a week or two beforehand. Get from the store, nail-kegs, and boxes of various sizes; if likely to he heavy, put in rope handles. Take up such plants as can be spared for the purpose, and *pot* them in these kegs or boxes, taking up as much earth with the roots as practicable. Do this towards night, place under a shed or in other sheltered place, where the wind will not reach them, and water both soil and foliage. The few that wilt will recover in a day or two, when they may be placed outside. When ready to take them to the fair, use stakes and twine to prevent them from jolting in the wagon and getting broken. When the plants are set in place, cover the kegs or boxes with brown paper. If one has plenty of Arbor-vitæ trees, he can cut them judiciously, and find that the twigs or branches are things of which there cannot be too many for decoration. Let whoever goes to the fair with the intention of working, take a paper of tacks, another of stout pins, balls of twine, fine and coarse, several pencils, some blank cards, a stout jack knife, and, above all, a cheerful, spirit that leads to the doing of everything that needs to be done to make all things show at their best—bring order out of chaos.

Canada Thistle—"A Sure Cure."

"H. W. S.," Montgomery Co., Pa., writes, that he has discovered the Canada Thistle in one of his fields, and asks if we can send a "sure cure" for it. After stating that he does not know where the weeds came from, he concludes by again wishing that we may send him a "sure cure." Our friend's letter, like many others we receive, shows that there is a very general belief that there is some special method for killing weeds, and he will no doubt be disappointed if we tell him that we know of no "sure cure" for Canada Thistle or any other weed. Plants, whether useful or not, are all subject to the same laws of growth, and no application can be made to the soil to stop the growth of an undesirable plant that will not also unfit it for the growth of useful plants. In order to destroy the Canada Thistle, or any other plant, we must consider its manner of growth. Our friend is troubled to know how the plant came upon his land. If he ever saw a patch of this thistle at the time the seeds were ripening, he would have seen that each little one-seeded pod, and practically a seed, was provided with a tuft of down, by means of which it could float upon the air, and be wafted for many miles. He would see seed after seed starting off on its journey, to be dropped sooner or later, where it would in time germinate and establish a plant. This would show him that one method to prevent the spread of this thistle upon his own land would be, to prevent any seeds from ripening, and that the sure way to do this would be to prevent any of the plants from flowering, which can easily be done by cutting off the stems before they flower. But the plants already in his ground will spread by "the root," as it is called, but really by underground stems, which the Canada thistle produces in abundance, and pushes them out in all directions from the original plant. Our friend's plants, however careful he may be to prevent them from flowering, will increase in this manner. Each original plant will soon surround itself with a colony of other plants, if allowed to do so. Our friend writes that he discovered them in "several places," by which we infer that they are not generally scattered. He well knows that to get a crop of potatoes he must encourage a luxuriant growth of tops, or vines—he also is aware that were he to cut away his potato vines as often as they appeared, he would harvest no tubers. It is just so with the Canada Thistle. If the tops are cut off as fast as they appear, it is impossible for the underground growth to increase. Put up a stake as a mark at each place where there is known to be a plant of the thistle; have some hoes well ground, and very sharp, and let it be the business of *some one* on the farm to keep every leaf and shoot cut off as fast as it appears, and the thistle must die. It is only where the Thistle has become well established, and has filled the ground, and thus has possession, that this method is not practicable. We have known cases in which a few thistles were only discovered, when they were far enough advanced to bloom, in which salt was applied with benefit. The whole top of the plant was cut off with a stroke of a sharp hoe, and a small handful of salt was applied upon the cut surface. That an excess of salt will kill all plants, useful or otherwise, is well known, and where the thistles are few, it may be well to apply it. If it be borne in mind that the thistle spreads in two ways only, by seeds and by underground stems, and that seeds may be completely prevented by not allowing the plant to flower, and that underground stems can not grow unless there are above-ground leaves to nourish them, the problem of destroying the Canada Thistle is a simple one. The only "sure cure" that we can recommend to our friend is a sharp hoe, to be used wherever a thistle is found, to cut away the flower stalks, and every green leaf that shows itself. This "sure cure" applies not only to the Canada Thistle, but to every other perennial weed that annoys the farmer.

Fruit Stains.—In the season of fruits, the napkins used at table, and often the handkerchiefs and other articles, will become stained. Those who have access to a good drug-store can procure a bottle of Javelle Water. If the stains are wet with this before the articles are put into the wash, they will be completely removed. Those who can not get Javelle water can make a solution of Chloride of lime. Four ounces of the Chloride of Lime is to be put into a quart of water, in a bottle, and after thorough shaking allow the dregs to settle. The clear liquid will remove the stains as readily as Javelle water, but, in using this, one precaution *must be observed.* Be careful to thoroughly rinse the article to which this solution has been applied, in clear water, before bringing it in contact with soap. When Javelle water is used, this precaution is not necessary; but with the chloride of lime liquid it is, or the articles will become very harsh and stiff.

Plans of a Silo.

From the various plans that have been suggested we select the one here presented as the most suitable in form, etc., for those who wish to erect a building for the preserving of green fodder. The silo is shown in perspective in figure 1. It is about twice as long as broad, and may be made of any size suited to the needs of the owner. The silo should be located where it will be handy both in the filling and feeding out of its contents. The walls are of concrete, resting on a firm stone foundation, and should have a thickness sufficient to withstand all the pressure from within. This will depend somewhat upon the area of the silo, and the hight to which the ensilage is carried. The roof is of boards, and resembles that of a hay-barrack; it serves the double purpose or keeping out the rain, and staying the walls by means of the uprights which bear the roof and pass into the concrete wall below. Four doors are placed at one end of the silo for the convenient removal of the ensilage. A portion of the wall is shown removed, that the ensilage may be seen, with the covering of plank and weight of stones in view. In removing the ensilage a thin slice is cut down the whole length of the end next to the doors, through which it is taken out. Subsequent layers are removed in the same way, by cutting down the fodder, as shown in figure 2, which is a

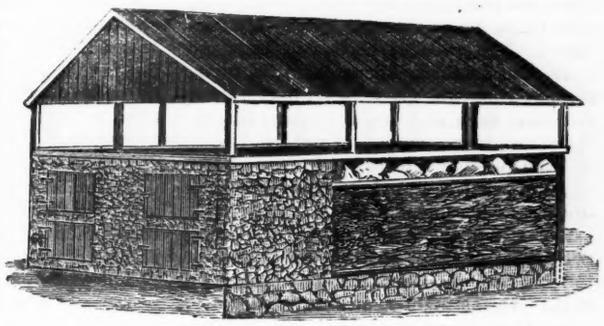


Fig. 1.—THE SILO IN PERSPECTIVE.

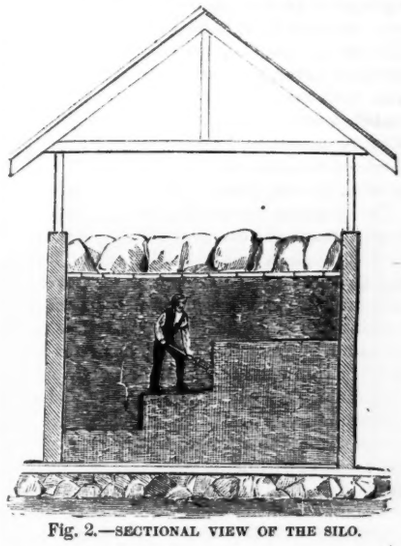


Fig. 2.—SECTIONAL VIEW OF THE SILO.

sectional view of a filled silo. The planks should run crosswise of the silo, so that only the covering of a single slice or layer need be removed at a time. After the first layer is removed, only the lower doors will be required for taking out the ensilage.

The Means of Controlling the Contagious Diseases of Animals.

BY D. E. SALMON, D.V.M.—WASHINGTON, D. C.

The most conservative will probably admit that, as a people, we have put off the consideration of what we can and should do, to arrest our losses from the contagious diseases of animals, longer than good policy has warranted. The so-called cholera of hogs and fowls, the southern Texas or cattle fever, pleuro-pneumonia, glanders, anthrax, rabies, etc., have been, and are, the causes of continual and increasing loss of our live stock; and the question returns, with ever greater urgency, what can we do to check and control these wide-spread plagues?

Practically, the only method of dealing with these diseases, that the experience of the past has sanctioned, may be summed up in the terms, slaughter, quarantine, disinfection. It has been recognized as a cardinal principle that sick animals must be kept at a sufficient distance from well ones to prevent the transmission of the malady; it has been found not less important to destroy the particles of contagion that have been deposited upon the walls and floors of stables, by the use of various chemical agents; and it has even proved advisable to slaughter the diseased animals in order to stop the generation and distribution of the contagion, and to hasten the disappearance of the plague.

In this way it has been possible to control, and, in particular instances, to completely exterminate certain contagious diseases. And probable we shall never be in possession of better means than these for combating such a plague as pleuro-pneumonia; but when we see vast sections of country over-run by such diseases as hog-cholera, chicken-cholera, or southern fever, particularly when we have to deal with malignant anthrax and black-leg, which seem so frequently to originate *de novo*, or, as is said, "spontaneously," we feel the need of a different class of remedies. But in what direction can we look for these?

The popular mind evidently inclines with hope toward the discovery of specific remedies—medicines which shall have as beneficial an effect upon the contagious fevers as sulphur ointment has upon itch (*scabies*), or quinine upon intermittent fever. The medical mind, however, has turned from this hope, after in vain exhausting the list of available remedial agents with an incredulity and even a repugnance toward the subject which has arisen from the numerous reverses. Even the latest experiments with our newest and most powerful antiseptics, alone and in combination, employed under the most favorable conditions, have been equally fruitless in good results; and it, consequently, seems that for the present, at least, it is useless to look toward chemical agents of any kind with an idea of arresting the course of a contagious fever when once the germs have gained entrance into the living animal body.

Turning to the experience of the past again, we find that success in controlling contagious fevers has been reached in two principal ways. On the one hand, the aim has been to destroy the contagious germs, and to prevent their multiplication and distribution by every possible means; while, on the other hand, we have sought to render the animal organism insusceptible to these diseases, or, in other words, to increase its power of resistance to such an extent as to prevent the multiplication of such germs within the body. With small-pox, as we all know, the latter plan has been carried out in man by inoculating with a very similar though much milder disease, to which cattle are subject. With the fatal plagues of animals, unfortunately, there does not appear to be a milder but closely related disease which may be used for such preventive inoculations. The justly celebrated M. Pasteur has, however, lately determined that with at least two of these plagues the germs might be left in a cultivation apparatus exposed to filtered air, until they lost a part of their rigor, and were no longer capable of producing more than a mild form of the malady. Another Frenchman, Chauveau, has discovered what seems to be even more practical, that in one disease the introduction of a sufficiently small quantity of the potent virus only produces a mild form of disease; and this principle, according to some recent experiments of the writer, applies to another though equally fatal malady affecting an entirely different species.

We have here, then, the most satisfactory grounds for believing that we shall soon be able, by means of preventive inoculations or "vaccination," to render our animals capable of resisting these destructive plagues. That this vaccination will entail a considerable annual expense is undeniable—but how much less will it be than the losses at present experienced? Is there not reason for hope, however, that even this may in time be avoided? We do not at present know exactly in what the insusceptibility to these diseases consists, but it seems to be a quality capable of being transmitted, to a certain extent, to the offspring. Even unvaccinated white men have a power of resistance to small-pox much greater than is possessed by races which have not been subjected to vaccination. Thus the disease is known to be remarkably fatal to Indians, and the party of Esquimaux which visited Europe a few months since were attacked with a virulence such as had never been seen by the physicians, and every one perished. The explanation of this, given by a celebrated Parisian pathologist was, that they were virgin soil; that is, the disease was foreign to their country, and their ancestors had never been affected by it. I was also struck with the remark of a medical friend, that the human race had acquired a certain power of resistance to another contagious fever, the virulence of which at present could not be compared with what it was in the early years of its history. So we find the people in yellow fever districts have acquired a certain immunity from this disease, and that cattle of the Southern States have an equal power of resistance towards southern or Texas fever, white Algerine sheep have acquired a remarkable power of resisting anthrax or charbon.

Not to mention other facts bearing on the subject, it may be added that there seems good reason to believe that, with a mild form of virus of the different contagious diseases, we may be able, not only to ward them off by vaccination, but that we may carry the insusceptibility to the most perfect degree, and, by conferring this quality on all the breeding animals, we may create breeds that will transmit it by heredity, and thus practically rid ourselves of the ravages caused by the animal plagues. Much research, however, is still required to settle these points, and to render the methods of vaccination practical and safe; but with an out-look brighter than ever before it is advisable to redouble our efforts in this direction, and to accomplish all that the most advanced science of the time can attain to. We shall doubtless meet many discouragements, and be foiled many times in our endeavors, but with determination, energy, and perseverance, success must surely crown our efforts at last, and this class of diseases which has discouraged our most advanced thinkers, and has been shrouded in the profoundest mystery for so many years, will disappear—conquered by that perfect science which patient work alone can develop.

Butter Substitutes versus Butter.

BY PROFESSOR L. B. ARNOLD.—ROCHESTER, N. Y.

At the Dairy Conventions held last winter, there was a concurrent feeling of solicitude and fear, running through the whole of them in regard to the safety of the dairy interest, on account of what was denominated butter and cheese adulterations. Excited discussions were indulged in, and resolutions were passed, vehemently denouncing everything in the shape of butter and cheese, not exclusively derived from milk and legislation was sought, and to some extent obtained, to protect the dairy interest against their introduction.

The idea held out, was, that if artificial substitutes, for butter in particular, were allowed to go into the markets unrestricted, they would, by the low price at which they could be sold, reduce the price of butter below the cost of production, and drive it out of the market, and out of existence. It cannot be successfully denied that cheap substitutes, closely resembling the original, thrust upon the markets in great abundance, would bring the price of butter down. The assumption that oleomargarine, in its best estate, can only compete with butter of a parallel grade, and that first-class butter will not be affected by it, is unsound. The experience of all commercial men goes to show that when any grade of butter, from over-abundance, is compelled to drop, grades both above and below soon sympathize with it, and that the price of first-class butter yields to the expansion of the lower grades.

But the course pursued on the part of the dairy in this conflict with substitutes, has been puerile, and betrays a spirit of intolerance and a short-sighted view of the merits and impregnable position of the dairy interest. That there is ample occasion for dairymen to open their eyes is plain enough, but there is no cause for alarm. The permanancy of the dairy interest does not depend upon the success, or failure, of substitutes for butter. These can, at best, only hasten a reduction in price, which, through a diminished cost in the production of milk and increase of production, is sure to be brought about.

Though dairymen and dealers often complain that the price of butter is too low, and are striving with all their might to make it higher, the fact is the reverse. It is too high.

It is out of proportion with other necessaries of life, and with prices in England and on the Continent. Just now, first-class butter is selling about the same in Sweden, Norway, Denmark, Holland, and the United States, but oftener than otherwise, it sells higher in Philadelphia, New York, and Boston, than in Copenhagen, Liverpool, or London. We seldom export first-class butter, because it is generally held above the price exporters can pay for it. This fact has often been noticed by dairy writers. The twenty-five or thirty millions of pounds, which are annually sent abroad, come mostly from second and third-class goods. The higher price of butter in the United States is not because it necessarily costs more to produce it than elsewhere. Our fine climate, and cheaper lands, which are well watered and rich, ought to enable us to produce butter as we do beef and grain, cheaper than it can be produced in England or Europe. It comes chiefly from the improvident management of dairymen which makes the production of milk needlessly expensive. Harris Lewis, of Herkimer County, N. Y., who is well posted in all that relates to the dairy, has often remarked that one-third of the cows in his county, do not give milk enough to pay for their keeping. I have travelled in about all the dairy districts of the Untied States, and considerably in Canada, and wherever I have been, I have found a similar proportion of poor cows. I think the milking capacity of cows in Herkimer County fully up to the average.

The policy which would shut out all competition, so as to maintain such a state of things that dairymen can make money with one-third of their herds non-paying, is wrong in principle. It is unjust towards consumers and no advantage to dairymen. It would be better to let the production of butter, whether natural or artificial, expand until prices come down nearer the necessary cost of production. Nobody would be hurt by such an expansion. A reduction in price would at once increase consumption at home, and swell the export trade, and it would have the good effect of weeding out the non-paying cows, and compelling a better selection and breeding of dairy stock, and a better economy in general dairy management, which would result in greatly reducing the cost of milk, and of course the cost of butter also.

A too high price of butter invites the invention of substitutes, and makes their introduction possible. If butter was sold at a fair profit above the *necessary* cost of production, oleomargarine could not exist.

To say that butter can be produced in New York as cheaply as oleomargarine, would doubtless seem to most dairymen a very extravagant statement. But such a thing is far from being impossible. The average cost of milk in New York and New England is estimated at half a cent a pound. This is believed to be a close approximation to the present actual cost, but it is too high. Milk can be, and ought to be, produced for less than half a cent a pound. Messrs. Whitman & Burrell, of Little Falls, N. Y., who keep a strict account of their business, say they can produce it for one-fourth of a cent a pound, and I have no doubt they can, and possibly for less. The way they work to do it is, in the first place, by providing suitable buildings and means for keeping their cows comfortable at all times of the year. There is a great deal in the economy of comfort; 2d, by selecting the best milking stock they can procure—a very efficient way to reduce cost; 3d, by cheapening the cost of their cattle food by better and cheaper culture and larger crops. Here is an opening for a large reduction; 4th, by keeping their cows the year round on succulent food, by means of soiling and ensilage, feeding from the silo, when they cannot do so from the fields; 5th, by making the supply of food constant and liberal, trusting nothing to the uncertainty of rainfalls and the variations of seasons. In this way a full and uniform flow is maintained during the entire season, securing thereby about one-third more milk than could be obtained from the same cows when periodically subjected to shrinkage from drouth and dry feed. By such means they can easily reduce the usual cost of milk one-half. What Messrs. Whitman & Burrell are doing, ten thousand other dairymen can do, and a great many are now working in the same direction. Great advances are being made all over the country in improving milking stock, and in reducing the cost of cattle food, and in other ways diminishing the expense of milk production.

When the cost of milk is reduced to one-quarter of a cent a pound, and the butter is separated from it by some of the modes of cold setting, so that the skim-milk will be kept sweet and sound until used, the refuse of the dairy, if judiciously used, will pay the original cost of the milk. The buttermilk and skim-milk from 100 pounds of new milk will, if fed to thrifty calves or pigs, make from 5 to 6 pounds of live weight, worth, on an average, 5 cts. a pound. In 1875, while in Illinois, I called on Israel Boies, at his butter factory, in Marengo, and found him buying skim-milk of his patrons, and paying 25 cts. a hundred for it, and was assured by him, that an exact account of cost and receipts showed that he was making well by the purchase. By converting their sweet skim-milk and buttermilk into cheese, Whitman & Burrell are making double what they could by feeding, and considerable more than their milk has cost them. Thus it is clear that the cost of milk can be so reduced that the refuse of a butter dairy will handsomely pay its cost, and the butter be had for the making, which certainly will not be more than the cost of making an equal amount of oleomargarine. What occasion is there then for alarm from substitutes for butter? Dairymen may as well possess their souls in patience. They have the staff in their own hands. If they will only put as much brains into their products as are put into their substitutes, they may let them take their course and smile at the result. The dairy interest is secure, and its security lies not in the high prices, but in reducing the cost to a minimum, and casting their goods before the world at prices so low as to defy competition. This course will gradually be adopted, and in the long run give a permanency and expansion to our dairy interests which we are now hardly prepared to anticipate.

Strawberry Plants in Pots.—Not long ago only a few dealers in small fruits offered strawberry plants struck in pots. This year nearly every nurseryman has sent a special list of varieties of strawberries in pots. These plants set this month will make a good growth, and yield a fair crop of fruit next spring. Of course, they cost more than ordinary plants, but not in proportion to the extra trouble required to produce them. The amateur cultivator is willing to pay for the satisfaction of having immediate results.

Preparing for Window Gardening.

Those who have plants in the grounds which they intend for blooming in the window, make a mistake if they delay taking them up until frost is threatened. If the plants have been left in the pots which have been plunged in the open ground, the change is not so sudden, but if the plants have been turned out of the pots, and their roots have been allowed free growth, it is another matter. With many plants turned out, the better plan is to raise new ones from cuttings for next winter's blooming, and let the old ones go. But it is often desirable to take up and pot an old plant. In such cases do not wait until there is danger of frost, and then hurridly dig up the plant, and crowd its roots into a pot. Suppose the plant to be taken up is a geranium; begin at least a month before the time of removal to prepare it for the change. It will have made an enormous top, which must be cut back and the plant brought into a neat compact shape. The change from the open ground to the pot should take place before cool nights have checked the growth. Amateur gardeners, as a general thing, are afraid to use the knife. If in taking up all the plants that are to be kept in the window during the winter, they would cut the tops back, to correspond to the disturbance of the roots, they would have much better success. Very old specimens of such quick-growing plants as geraniums are so rarely satisfactory when lifted from the open ground, that even at this late day we should prefer to start young plants from cuttings. On the other hand, hard-wooded plants, such as roses, with strong plants are preferable, and these should be taken up this month and be well established in pots. The plant should be pruned before it is lifted, and then given a fair-sized pot with rich soil. Give water and place it in the shade for a few days, and it will recoverfrom the change, and be in good condition for the window.

No plants are more satisfactory for window culture than the Dutch bulbs, as they are called, especially Hyacinths and Narcissus. They are not always to be had as early as this month, but as soon as the dealers offer them, they should be procured and potted, in rich soil, and the pots kept in a cool dark place.

Improving the Cereals.

BY W. J. BEAL, PROFESSOR OF BOTANY, MICHIGAN AGRICULTURAL COLLEGE.

In regard to raising and using the best seeds, I think the farmers, as a class, are quite deficient. Especially is this true in regard to the cereals. Heavy or light, of good quality or poor, the result of the harvest is generally attributed to the richness of the soil or the nature of the season.

A few careful observers and experimenters have shown that, with the same care in all other respects, a crop may be increased from one-tenth to one-half, by using the best seed adapted to the soil and climate. Such seeds are worth much more than the average farmer is likely to be willing to pay for them. Every one claims to believe in the use of good seeds, and generally thinks he uses no

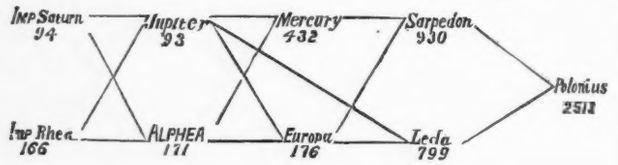
other. Very few persons appreciate the great amount of study, and care, and money, which have been employed in improving the various breeds of our domestic animals. The process is a slow one, and many meet with moderate success. These men study the qualities of both parents, and their ancestors, and always have what seems to them good reasons for every step they take in breeding.

In the same manner we need large numbers of skilled experimenters to improve our cereals. Principles underlie the breeding of plants as well as the breeding of animals. The results are much more rapidly obtained; the larger increase gives us a much greater chance for selecting the best. How shall the cereals be improved? Many of the processes have been again and again stated. Study the writings of a Sturtevant, or a Blount, or a Hallett. Repeat what they have done, add thought to the work, and make additional experiments. Let an enthusiastic student, with practical tact, plant a piece of corn, or wheat, or other crop, on good soil, near his house, where he can easily watch it every day. Let him carefully observe the differences to be found in the same plot from the seed from the same ear. Select parents which suit, see that they are crossed, and select the seed for future use. Do not neglect the soil and cultivation. Here is a grand field for experiment—one but little worked, and one ready to reward skill and patience with a bountiful harvest.

At a recent meeting of Professors of Agriculture and Horticulture, held at Michigan Agricultural College, the subject of co-operation in experiments was discussed. They agreed to begin, among others, some experiments looking to the improvement of our cereals.

The Jersey Bull "Polonius" (2513).

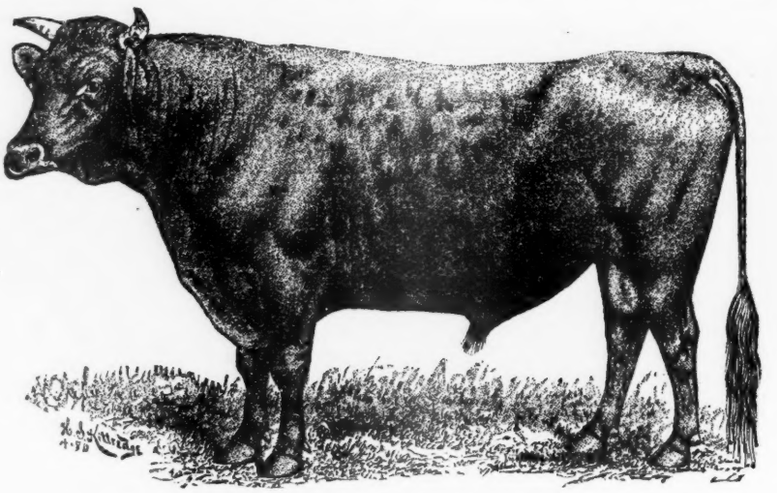
Among the descendants of the Jersey cow "Alphea" (171), of which a portrait and description were given in the *American Agriculturist*, 1880, p. 183, the bull "Polonius" (2513), is worthy of notice as having been sold at auction, in May last, for $4,500—the highest known price ever paid for a Jersey. As our readers are interested in knowing something of the real merits of an animal that could command such an extraordinary price, and of the influence he would be likely to exert, under favorable conditions, in developing and improving the best characters of a breed that stands pre-eminent for its butter making qualities, we present a portrait of this noted bull. The principal points in its ancestral history that are looked upon by breeders as indications of his prospective value as a stock getter, are also given. The fact that "Polonius," and his grandsire "Mercury" (432), now nearly twelve years old (see *American Agriculturist*, 1880, p. 465), are the only strictly pure "Alphea" bulls now living, undoubtedly had its influence in increasing the spirited competition of prominent breeders who were seeking the "Alphea" blood as the most promising element for the improvement of their herds in their most valued characters. In the diagram herewith his pedigree is given in a convenient form for reference, and one in which the relationship of his ancestors can be readily traced.



THE PEDIGREE OF "POLONIUS."

The history of the importation of "Saturn" (94), and "Rhea" (166), has already been given in the description of "Alphea," and we need only refer to the care taken in the selection of these animals as an important element in determining the practical value of the popular family descended from them. In the next generation, it will be seen, by reference to the diagram, that "Jupiter" (93), is full brother to "Alphea," who became celebrated not only for her individual excellence as a butter cow, her record being at a rate of over 24 lbs. of butter a week, but as the progenitor of what is known as the "Alphea family," which probably includes more noted performers than any other on record. That her brother "Jupiter" has been equally successful in transmitting their common characters is shown in the number of his daughters, and grand-daughters, that have records of over 16 lbs. of butter a week. "Mercury," and "Europa" (176), a son and daughter of "Alphea" and "Jupiter," appear in the next generation of the pedigree, and like their parents are full brother and sister. "Mercury" is a remarkably fine animal, of strong constitution, and now heads the herd of Mr. Wm. Simpson, where he is doing good service. He is the sire of many valuable animals, and one of his daughters, "Alphea Princess" (11158), recently sold at auction, at the age of eight months, for $2,225. "Europa" (176), is the dam of the famous cow "Eurotas" (2454), figured and described by us in 1880, p. 305, who made 778 lbs. of butter in eleven months and six days, and dropped a calf within the year.

It is worthy of notice that "Europa" has had nine calves, and that her last one, got by "Mercury," was dropped last May, when she was over fifteen years old—so that her in breeding has not apparently impaired her fecundity, as it has not evidently her constitution. Turning again to the diagram, we find in the next generation "Sarpedon" (930), and "Leda" (799), the sire and dam of "Polonius" who are both out of "Europa," and therefore half brother and sister. But their relationship is still closer, as "Sarpedon" was got by "Mercury," the full brother of his dam "Europa," and "Leda" was got by "Jupiter," the sire of both "Mercury" and "Europa." "Leda" is a cow of good symmetry and strong constitution, and has been a good and persistent milker. Like her dam "Europa," she has been a good breeder, dropping her first calf at the age of three years, in 1872, she has with a single exception (1879), had a calf every year since, and all but one are now living. At the age of over 12 years, "Leda" was sold at auction in May last, for $3,000, the highest known price for a Jersey cow. Aside from her dam "Europa," who, as we have seen, is still breeding, "Leda," and her descendants, are the only strictly pure "Alphea" cows living.



THE FAMOUS JERSEY BULL "POLONIUS."

The in-and-in breeding of "Polonius" has therefore been continued for several generations, and as he does not appear to be deficient in the desirable characteristics of form and constitution, he should transmit to his offspring with great certainty and uniformity, the invaluable qualities of the "Alphea blood," which he has inherited from some of the best members of the family.

Peach Trees in East Tennessee.—E. Henry writes from Greenville, Tenn., that there is at least one place where the peach still flourishes as it did in the older States half a century ago. Curl, yellows, and other modern peach troubles have not invaded those mountain localities where peach trees give no more trouble than do the trees of the forest. Our correspondent states that numerous orchards have been in bearing for twenty-five years, and some that are fifty years old, and still yield crops of large and delicious fruit. In Tennessee the peach orchards planted upon the tops of the hills, rarely fail to give a crop, while those in the valleys are often injured by late spring frosts. Mr. H. states that a note we published some years ago on the healthfulness of Tennessee peach trees, has directed the attention of some of the more enterprising nurserymen to the locality, and that these now procure their seed for raising stocks from these. It is always best to select fresh seed pits for planting from the most healthful localities possible.

Sundry Humbugs.

That a vast deal of swindling is done through false claims for patents, is well known to those who keep the run of such matters. A farmer sees a device, one for a gate, for example, in the *American Agriculturist*, or other paper; it seems to be useful and easily made, and he constructs one. Some of his less wide-awake neighbors, after they have seen the gate thoroughly tested, take pattern from this, and in time there will be several such gates in the neighborhood. After awhile a chap comes along, claiming to hold a patent for the very device that makes the gate desirable, claims $5, or other sum as royalty, which must be paid at once, or a prosecution will follow. Such cases are occurring continually, not only with patents for gates, but with numerous other devices in use upon the farm or in the house. In such cases, where the claim of the patent is a fraudulent one, as it very often is, we advise resistance. But there are two sides to the question. While we do not regard our patent laws as perfect, they are as good as we are likely to have, and, good or bad, they are *laws*, and must be observed. The man who has taken out a patent has certain rights which the laws have, for a consideration, secured to him, and we would no more encourage an infringement upon a legitimate patent than we would favor the payment of fraudulent claims. But, it will be asked, what is one to do, if he is accused of infringing a patent? The first thing to do is to "take matters easy," and

Don't be Frightened into Doing Anything.

This is a country of laws, and if one has unintentionally infringed upon a patent, he will not be executed at the next cross roads without the benefit of clergy. Nor yet will he be thrown into a dungeon, and fed on bread and water. The holder of the patent must bring a suit, and in a United States Circuit Court at that. In the cases where the claim is a just one, and a person's rights have been infringed, the holder of the patent will not be likely to indulge in threats, as he feels confident he is right, and the use of bluster and threatening of itself suggests fraud. Of course, every such case will have its peculiar features, and we can only give the general advice, to not be frightened, to do nothing in a hurry; consult the neighbors, as there are usually several such cases in the vicinity, to secure unity of action, and if convinced that the claim is a just one, make the best compromise possible. A correspondent at Carbon Center, Pa., sends us an account of a case in which claimants of a gate patent sued farmers for an infringement. The defendants, the farmers, were present in court with their witnesses, but the plaintiff did not appear at the trial, thus admitting that he had no cause. Every one claiming to hold a patent on an article should be willing to give its number, and the date on which it was issued. By writing to the Patent Office, at Washington, a copy of the patent can be procured for a moderate fee (50c., we think), and this will allow one to judge of the validity of the claim.....Some swindles, no matter how thoroughly exposed, have long lives. Here is the

Powder to Prevent Lamp Explosions.

It is over 10 years ago that we showed up this powder, a pinch of which put into the lamp would not only prevent explosion of the oil, but insure against the breaking of the chimney. This wonderful stuff was nothing but common salt, colored blue with ultramarine, and, of course, utterly without effect in preventing explosions. We had not heard of this for several years, until a Spencerport paper came to hand with an account of the success of this swindle in one of the finest portions of New New York State. Two well-dressed chaps not only sold the powder, but offered premiums of furniture and carpets to purchasers. At last accounts "they turned East at Ogden Center Church," driving at full speed, and we regret to say that the sheriff failed to come up with them.

Gambling in Grain and Provisions.

We have a circular from a concern in Chicago that reads wonderfully like the old "put and call" manifestoes of the swindling New York Stock Brokers. Those begged people to put money in their hands for gambling in stocks, and these ask for money for gambling on the price of grain and provisions A friend who has received one of these sheets wishes our opinion of it.—We haven't any. ....There are some things so self-evident that we wonder that any one should be at the trouble to ask about them. Here is an inquiry from a Philadelphian about a Philadelphia Association,

"For The Aid of Unmarried Persons,"

and "mutual aid" at that. Our correspondent writes, that he called at the office in Philadelphia, and was informed that he could become a member by the payment of $32, and that one year thereafter he would receive $1,000! Yet, instead of becoming a member, he sits down and writes us, if we know anything about the Association. We have to plead ignorance, it seems to be the "most mutualest" of any Association we have heard of—beats the Boston Women's Bank. It should be called a "Society for the Encouragement of Celibacy," for we doubt if there is any shop where a married man can get a cool thousand on investing $32. Our correspondent asks "if it is a humbug?" We give it up....A friend sends us a show-bill of

An Excelsior Gas Burner,

which fairly shouts and screeches for persons to act as agents for it, and asks our opinion as to his taking the agency. We have read over the sheet carefully, and advise him, unless he wishes to become accessory to manslaughter, to let it alone. Though it is not so stated in plain terms, this burner is to be used with Naphtha, Benzine, or similar light petroleum products, something "that will cost one half less than kerosene." It claims over and over to give a "gas light," which is simply untrue. It is a contrivance for burning the *vapor* of one of the liquids mentioned. A gas is permanent at ordinary temperatures, the vapor produced by the heat of the burner is no more a *gas* than is steam. That a bright light may be produced is very likely, but there is always great danger when any of the liquids of the benzine class are in use. The sale of gunpowder is regulated by law, and so is the sale of poisons in most States, but these dangerous liquids, more dangerous than gunpowder, because so little is known of their real nature, may be sold freely in every country store. No device of burner, no form of lamp, can make it safe to have these liquids in use in the house....After reading of the old medicines over and over again, it is really refreshing, to come across an entirely new one. This time

We have Literally "Struck Ile!"

and Shark's Oil at that, or to be exact, it is "Foo Choo's Balsam of Shark's Oil," and a very potent thing it is, as it is "the only absolute cure for Deafness known."—Now where are your *Audi—Denta*—and other kinds of *Phones?* This ought to be called a "chromatic" oil, for it comes from a small "*White* Shark," caught in the "*Yellow* Sea." "Its virtues were discovered by a Buddhist Priest about the year 1410."—What's Ancient Greece by the side of this venerable oil! We are a little puzzled to know how this priest, one of the first principles of whose religion is not to take animal life, got at his oil. But why be captious when we learn that since they had their ears rubbed with this shark's grease, "no deafness has existed among the Chinese people!"

Tomato Seeds.—"B. H." complains that he finds it difficult to get rid of the slimy pulp that surrounds the seeds of tomatoes. It is a very easy matter. On a small scale it is better to cut open the fruit and remove the small clusters of seeds surrounded by the pulp. Place in a vessel with water enough to cover them, and let them stand 48 hours. In warm weather they will usually ferment sufficiently in this time to destroy the surrounding pulp. Try a few, and if they do not wash out clean, let the mass ferment a while longer. As soon as the seeds can be washed clean, wash them thoroughly and spread them upon thin paper to dry.

Bee Notes for September.

BY L. C. ROOT.

In most locations the season for honey gathering to any great extent has now passed. Some sections will afford honey from Sweet-scented Clover (Melilot), and others from Golden Rod, Aster, Eupatorium, and other fall flowers. In the August Notes I urged the necessity of not endeavoring to secure too much surplus, and thus leave the brood combs with too little honey for the bees to winter upon. There will be cases where the honey yield closes very abruptly, when the combs will be fully occupied with brood, and the honey almost entirely stored above in the boxes. Where this is the case, the bees must be fed. Where fall flowers are abundant, and more honey may be stored than is necessary for winter, empty combs should be supplied, and honey stored for spring feeding.

What Shall We Feed?

If there are exceptional cases where, from improper management, or from causes referred to above, we find feeding necessary, what shall we feed?....I answer, let it be pure honey. I have heretofore advocated the use of the best "A" sugar, but time has changed in our practice. The darker grades of honey are now so low in price that it is no longer to our interest to feed cane sugar and sell our honey. But our strongest argument against feeding other sweets than honey is, that great efforts must be made by bee-keepers everywhere to preserve the standard of purity of honey. For this reason, I urge that no other food than honey be used for our bees. I am well aware that cane sugar may be used for wintering in such a manner that all of it will be consumed by the bees, but as we advance in the business, I find it desirable to feed more freely. While so many articles of a saccharine nature are being so freely and vilely adulterated, bee-keepers should avoid even the appearance of adulteration.

Good Queens.

See to it that each stock is supplied with a good, prolific queen. It is important that all queens be of good quality upon entering winter-quarters.

Natural Swarming.

A correspondent sends a description of a hiving box, and his manner of hiving bees. So far as rubbing a hive with peach leaves, or washing with salt and water, or other preparation is concerned, I have only to say it is not necessary. Simply keep hives in a shaded place before using, have them clean, and shade well after the bees are hived. I am not disposed to spend much time upon the subject of natural swarming, as we now have better methods.

Rapid Honey Gathering.

Those who availed themselves of the best methods, have generally secured a good yield of honey. Up to date (July 25th), White Clover has continued to afford honey abundantly. Basswood does not promise to yield as freely as during many years past. It has been in bloom several days, but the flow of honey from it seems moderate.

The hive referred to last month, has been extracted at intervals and has given as follows: July 4th, we extracted 62½ lbs. This amount was taken from the upper story of combs only. July 8th, we took from all the combs 114 lbs. July 12th, 66 lbs. July 19th, 40½ lbs. July 22d, 36 lbs. July 23d the hive was moved six miles to the "Hights," to take advantage of the prolonged yield of Basswood, and of a greater range of Buckwheat.

As an item of interest I will give the amount gathered per hour, the hive being weighed at intervals during the afternoon of July 10th:

At 1 P.M.	it weighed	.....	155	pounds.
" 4	"	"	"	.....	160	"
" 5	"	"	"	.....	163	"
" 6	"	"	"	.....	166	"
" 7	"	"	"	.....	171½	"

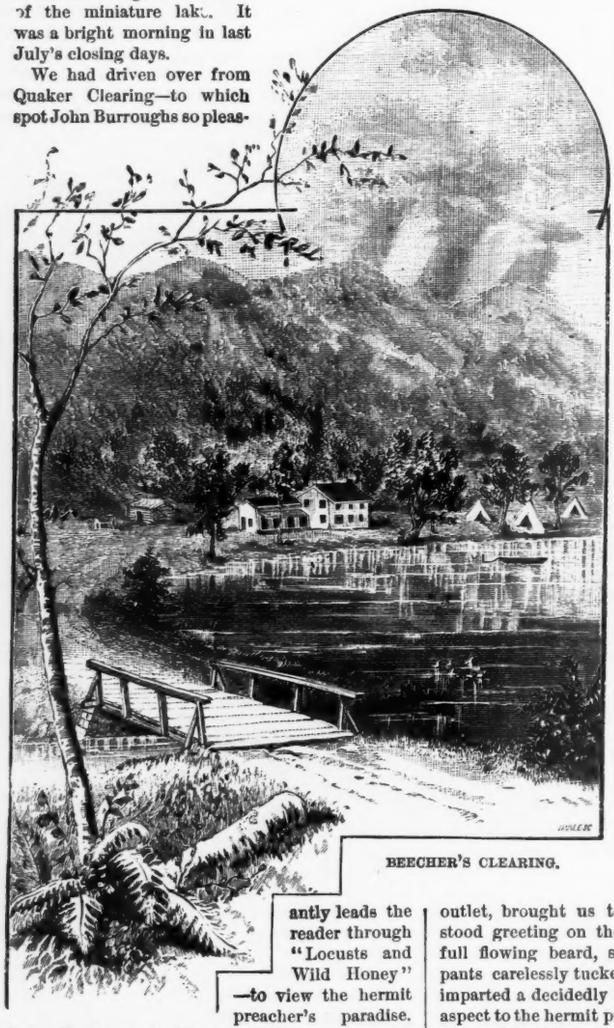
The greater gain during the last hour was probably due to the presence of more bees in the hive, which did not go out again, it being too late.

Beecher's Clearing.

BY DAVID W. JUDD.

Our mountain Buckboard shot down a sudden pitch in the wood road, and with a bound rested on the bridge at the foot of the miniature lake. It was a bright morning in last July's closing days.

We had driven over from Quaker Clearing—to which spot John Burroughs so pleasantly leads the reader through "Locusts and Wild Honey"—to view the hermit preacher's paradise. And as Buckley halted the horses there on the rustic bridge, our eyes feasted upon a scene of surpassing loveliness and beauty. Mountain ranges, almost mingling with the clouds, lay about in a semi-circle. Oval-shaped and covering perhaps forty acres of territory, the lake shone like a rich diamond in its rough and rugged setting. Trees of every variety, and foliage of every hue, fringed its borders, the scarlet at the far end vividly contrasting with the rich green. At the left stood the owner's cottage, and beyond, the tents of his brotner, who had come for his early pastime.



BEECHER'S CLEARING.

Settling in the Wilderness.

To go back six years or more, Thomas and James, two of Dr. Lyman Beecher's remarkable family of thirteen children, including Harriet Beecher-Stowe, and Henry Ward, the third son—were accustomed to wander through these wild backwood regions of Ulster Co., comprising the lower Catskill range. Pastors of flourishing congregations, the former at Elmira and the latter at Poughkeepsie, they came for the rest which the woods afford, the health which air fragrant with balsam brings, and the enjoyment which remote trout streams furnish. One day they discovered this beautiful sheet of water, hidden in the mountain forests, far from any travelled way. Upon the following summer they revisited the spot. James became so enraptured with the whole surroundings that he erected a rude cottage in place of his tent. Subsequently he resigned the pastorate of his Poughkeepsie church, with its three thousand dollars salary, and made this his permanent home—captivated with the restful tranquility of the unbroken forest and the unvexed water. Hawthorne desired to get away from the world because he disliked society, and Thoreau thought he would be contented at finding some spot to which newspapers could not penetrate.

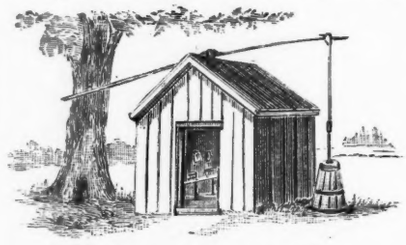
But Rev. James had not, like them, wearied of civilization. He simply loved his mountain retreat better. And so he continued to extend the dimensions of his cottage, to fell the trees, and clear away the underbrush, until now, of the mile square of territory which he controls, twenty acres are under cultivation, and afford the nucleus of a good stock farm in the near future. Meanwhile Rev. Thomas has continued to come every summer for from six to eight weeks. At Turnwood's, seven miles away through the forest, they get their mail, once a week, and what with farming, fishing, boating, grouse hunting, etc., time passes rapidly. Every other Sunday Rev. James, who is highly respected by the scattered settlers in this out-of-the-way region, goes from his mountain, down to Shin Creek on the Beaverkill, and preaches a sermon, which people come from miles and miles to hear. 'Tis manna in the wilderness for them. No whiskey is sold in Hardenburgh township, unless by stealth, and Sunday fishing and hunting are prohibited. I suspect Rev. James has had considerable to do in bringing about this desirable state of things.

A few rods drive from the bridge, over the lake's outlet, brought us to the dwelling. Rev. James stood greeting on the porch. Bronzed features, full flowing beard, sombrero, checked shirt, and pants carelessly tucked into capacious boot tops, imparted a decidedly frontier aspect to the hermit preacher. Three door-windows extending from floor to ceiling, looked out from the wing upon the water. A huge fire-place was suggestive of both comfort and long evenings. "This," said Rev. James, "was at first my main building. Originally I began with a fly tent. It was supplanted with a wall tent the next season. The following year I became so enamored with the spot, that I decided to leave Poughkeepsie and reside here the year around; then I built this, what now appears as an extension, and subsequently the main habitation. I have done all the work myself, and there are associations connected with every clap-board and shingle even that is laid."

Charming Views.

From the extension we passed into the main building, comprising the sitting-room, bed-rooms, etc. A large double bay window, as shown in engraving, opens on the lake side, commanding most sweeping and enchanting views. "A sailor by nature, and a minister by grace, I love to sit here by the hour," said Rev. James, "and look out upon these surroundings. They are a source of never-ending enjoyment. During the winter months, I am still more fond of this retreat, for as the beautiful snow lies so still and quietly all about us, there is nothing to either disturb or discolor it. Here is true repose, and communion with nature. I have not read a book in a year or more, and should not miss the papers were they not sent to me. My expenditures, including my buildings, and improvements, etc., have not averaged more than four or five hundred dollars a year; and with these buildings completed, as is now the case, I can obtain more real enjoyment and comfort here with three hundred dollars a year than with three thousand dollars in New York."

In reply to a suggestion that Henry Ward ought to enjoy a summer here as a change from the Fishkill farm, "No," said Rev. James, "he is too fond of æsthetical surroundings for this spot. He wants too much bric a brac about him, which I do not care to lumber up my rooms with."



BEECHER'S SPRING HOUSE AND CHURN.

To another suggestion that the house should be protected by a lightning-rod, Rev. James replied: "I don't believe lightning-rods are any protection. The insular theory is exploded. If I did put one up, I should have it lay direct upon the house, without any glass insulators. But if I am ever going to be killed, I had rather die by lightning than any other way."

Three Graces.

Several pictures, indicating culture, ornamented the plain walls of the sitting-room, and the well-known engraving of the Beecher family flanked the bay window. Three lovely blonde children, with long golden curls, and a visiting brunette from Brooklyn, were receiving their morning lessons from a pretty Owego governess who had come to spend the season in the woods. School was at once adjourned, and a few moments later the bevy of beautiful children were running about the lake shore barefooted and barelimbed, pictures of health and enjoyment.

VIEW FROM BEECHER'S BAY WINDOW.

In the rear of the house, a side-hill cellar, also made by the owner, serves all the purposes of a

refrigerator. The garden, rich in root crops of every variety, presents a striking contrast to the rough unsubdued country about it. It was indeed a novel sight to see growing here Champions, Sharpless's, Triumphs, and even the Bidwell strawberries, a few plants of which Mr. Roe had just sent to the clearing. All manner of garden truck

STATIONARY CAMP CHAIR.

thrives here, owing to the proximity to the lake, when in the settlements, several hundred feet below, they are often killed by the heavy frosts.

On the further side of the garden, close up to the forest line, a log barn displayed more of the preacher's handiwork. Enough grass was cut from the clearing last season to winter his horse and three cows, and this spring, when the barns down in the settlements were empty, he still had a considerable stock of hay on hand.

I was not a little amused at discovering some Brussels' carpeting in the mow, Rev. James, in his fancy, preferring to stow away these "relics of civilization," as he called them, in the barn, to putting them to practical use in the house.

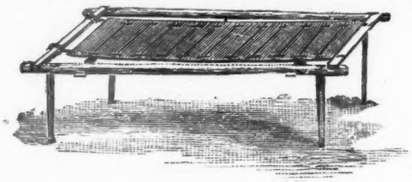
Spring-House and Churn Contrivance.

A few rods from the barn, in the forest edge, stood the spring-house, covering a perennial spring, and surmounted by a novel churning apparatus, Mr. Beecher's make. It consists of a sapling, see illustration, fastened to the roof of the shed, with a pole suspended from the upper end. From the lower end of this pole an ordinary screw protrudes, which fits into a groove in the handle of the churn. The elasticity of the sapling enables you to play the handle up and down with very little physical effort, thereby avoiding much of the labor ordinarily necessitated in churning. This simple contrivance, resembling the old-fashioned well-sweep, can be made by any one in two hours' time.

Buckwheat, Oats, and Grass, comprise this year's crop, and the proprietor raises about everything required, save flour and groceries, to maintain his family. He says that unless he should, owing to now unforeseen circumstances "burst up," he expects ere long to become a very respectable farmer way up here in the mountain forest of Hardenburgh township, two thousand feet, more or less, above tide water, and 117 miles from New York by rail, and 26 by private conveyance.

Brothers Tom and Jim—a "Talk."

Retracing our steps to the house, we followed along the Lake shore to the tents, marvels of neat-



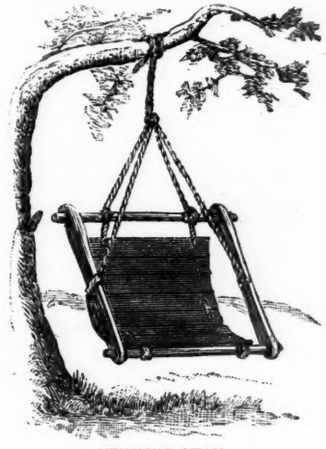
CAMP BEDSTEAD.

ness, occupied by Rev. Thomas K. Beecher and his lady. "Brother Tom, let me introduce you to So-and-so," said Rev. James, and "Brother Tom" rose from his novel easy chair, after the manner of Dr. Livingstone in the Nijiji forest, when Stanley came suddenly upon him. "Brother Tom," in physique, flowing beard, dress, and general appearance is the double of "Brother Jim." He laid down his briar wood, requested "brother Jim" to go inside, and bring out some more pipes, and then motioning us to home-made chairs, we were soon seated about the camp-fire for a "talk." The scene was picturesque and charming in the extreme. The lake murmured at our feet, and rippled against the sides of a miniature flat boat. A dense forest formed a dark background, and a rich carpet of green spanned the intervening space. Overshadowing maples tempered the rays of the sun, which fairly flooded the near range of wooded mountains, and gilded the distant peaks. Huge boulders here and there stood out in bold relief, as if stranded on these mountain sides in the grand "ebb and flow of nature." Two children were playing in a swing suspended from a neighboring tree, while a third amused herself with tossing pebbles at a domesticated duck which came sailing by with her pretty little brood. Mrs. Thomas Beecher, a cheery-faced, matronly lady, soon emerged from the nearest tent and joined the group. Illness that day kept Mrs. James Beecher to her room.

Camp Fire Contemplations.

Who, thought I to myself, would not gladly exchange for such a fairy scene, for such a charmed existence, the intense life of business centers, the brain racket of law, journalism, or politics—at the risk of having your friends or the world say, you are queer, off your balance, are vegetating, have buried your talent, or gone into mental bankruptcy?

If all there be of life, is preparation for another, and attainment of present happiness; if this life here be intellectual insolvency—better one week of Beecher Clearing than a whole cycle of the



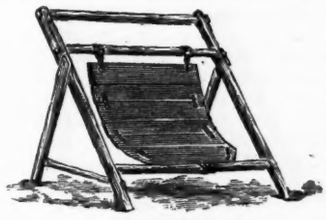
SWINGING CHAIR.

average business or professional man's existence, however crowned it may be with material or "reputational" success! Better, versed in woodcraft than in the trapping of men! Better green and woodsy, than ripe and cosmopolitan as the world goes! They may not continue long, but such thoughts as these whip the brain, as you, for the time being, become a part of this quiet, restful, delicious existence, here by the lake.

"Wife and I have been coming here for this tent-life now going on six years," exclaimed brother Tom, as he rose, stretched his limbs, and refilled his pipe, "and we like it better and better every summer."—"Yes," chimed in brother Jim, "and you, gentlemen, show good sense in cruising about these mountains, rather than on the main, with a festive boating party. You have heard the sailor's response, when asked by a fellow tar what a yacht was! 'A lot of rich fellows come down to the water, get any old raft, run up two poles, tie a couple of sheets to them, roll a barrel of whiskey aboard, have a week's spree, and they call that a yacht.'"

A Busy Life.

Rev. Thomas, who is fifty-six, about two years older than Rev. James, rapidly epitomized some of the chapters of his busy life. He told how Horace Greeley pressed him to take half of the "Tribune" in its early days; described the amazement and positive horror of the cockney servant, at his (Beecher's), putting his hat into his pocket, instead of hanging it upon the rack, when he was ushered into the presence of the late Dean Stanley; narrated interesting incidents of a South American tour, and went over his long and eventful pastoral life of nearly thirty years, at Elmira. Later on we discussed theology from various standpoints, and my conclusions were, that, neither orthodox nor heterodox, he had been very happily classed, with brothers and sisters, by some one who knows them all, as "saints, sinners, and the Beecher Family." After my day's visit in this remote spot, reached only by a private road, with these two



MOVABLE CHAIR.

brothers, so fond of each other, apparently so fond of all the other members of their family—I could appreciate the significance and fidelity of the above classification.

Mrs. Beecher's Camp Bedstead.

Mrs. Thomas Beecher, who meanwhile had been reading her letters, brought by a frontiersman from the settlement, called us to the tent to inspect their easy bed, see illustration. Four plain boards are nailed to four plain legs, making a skeleton lounge. Inside these boards, resting upon cross pieces, to prevent it dropping down too far, is a stretcher made of barrel staves, fastened together by an ordinary bed cord, which passes through holes bored near the ends of the staves. This affords a very springy support for the tick, filled with straw, hay, leaves, or wild grass, if there be nothing better at hand. The bed can be made in a short time with an axe, hammer, auger, a few nails, and a strong cord or light rope, and serves a good purpose at home as well as in camp. If no barrel staves are at hand, tree limbs, or pieces of wood, can be used.

Stationary Camp Chair.

The chair, see figure, which Rev. Thomas occupied, is likewise easily made. Into the sides of a log, five or six feet long, two poles are inserted, and fastened together at the top with a cross-piece. Suspended from the latter is a stretcher made like the one on the bed, viz., of barrel staves, and fastened to the log by the ropes, which hold the arched staves together. Resting your legs over the log, and throwing yourself back in the stretcher, which readily yields and adapts itself to the back, you obtain a most comfortable, half-reclining position. The weight of the log keeps the framework stationary, and from toppling over.

Another chair, though more elaborate, is made on the same plan with side rests for the arms.

The Movable Camp Chair.

Still a third chair is so constructed that it can be readily moved about from place to place, as

CAMP CHAIR.

needed, the upper cross-piece serving as a handle for lifting it about.

The Swinging Chair,

Made much after the same model, can be hung against a tree, or suspended from a limb. All these chairs, which, like the bed, are Mrs. Thomas Beecher's inventions, will be found very useful elsewhere, as well as in camp, combining, as they do, comfort and cheapness. They would likewise serve as very handsome rustic ornaments for verandah and lawn, or for dining and sitting-room, for that matter.

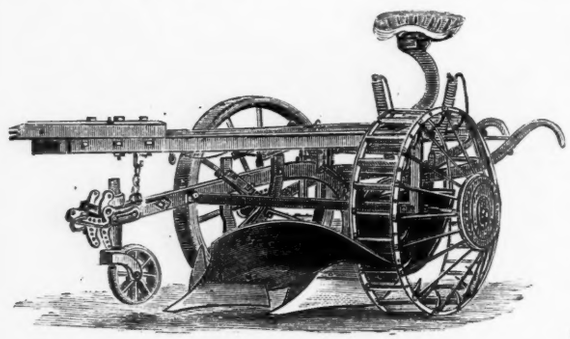
As we conversed, trout were seen to occasionally rise under the overhanging branches on the opposite shore. Rev. James quickly pulled us over in

his flat boat. Counsellor Van Siclen made one of those magnificent casts, alike the admiration and the envy of the Beaverkill, and a speckled beauty—regulation size—lay quivering on the bottom of the boat. We had proved to our own satisfaction that there were trout in the lake, and cared to kill no more that day. They begin taking the worm well with the going out of the ice, and readily rise to both worm and fly until July.

Shoddy clouds came floating over the clearing with occasional drops of rain. We hurried to the house, partook of a spread which required no apologies, and were soon wending our way down the mountain road, turning back every now and then, to catch through the rifts in the trees a view of the little paradise we had left. 'Twas rough riding, you may be sure, but now, that Rev. James has been chosen road master, we may reasonably expect that he will at all events look after his own thoroughfare, or rather No Thoroughfare—and so anticipate smoother sailing on our next jaunt thither. Rev. Thomas accompanied us, and an intellectual mitrailleuse, as he is, every tree, and brook, and stone elicited his fire, until we were back at Quaker Clearing.

A New Combined Plow, Pulverizer, etc.

Our first plowing, some fifty years ago, was done with a wooden mould-board. Then came in the wrought iron mould-board, hammered out by the blacksmith. About forty years ago the introduction of the cast iron mould board, with replaceable points, caused no little excitement among farmers, as these could be produced so much more cheaply than wrought-iron, and being harder they wore longer. But on our stony farm the gain was partly counter-balanced by the breaking of the "points," and often of the "land-side" and even mould-board itself.—A few years later the steel mould-board and points came into use, and subsequently the chilled iron



A COMBINED PLOW, PULVERIZER, ETC.

plows. But during all these fifty years of improvement, and from time immemorial before that, the chief ends aimed at have been the perfecting of the old instrument, in form, in material, in the frame, in coulters, guiding wheels, etc. The principle has been the same, viz., the cutting off of a furrow slice and inverting it more or less perfectly.

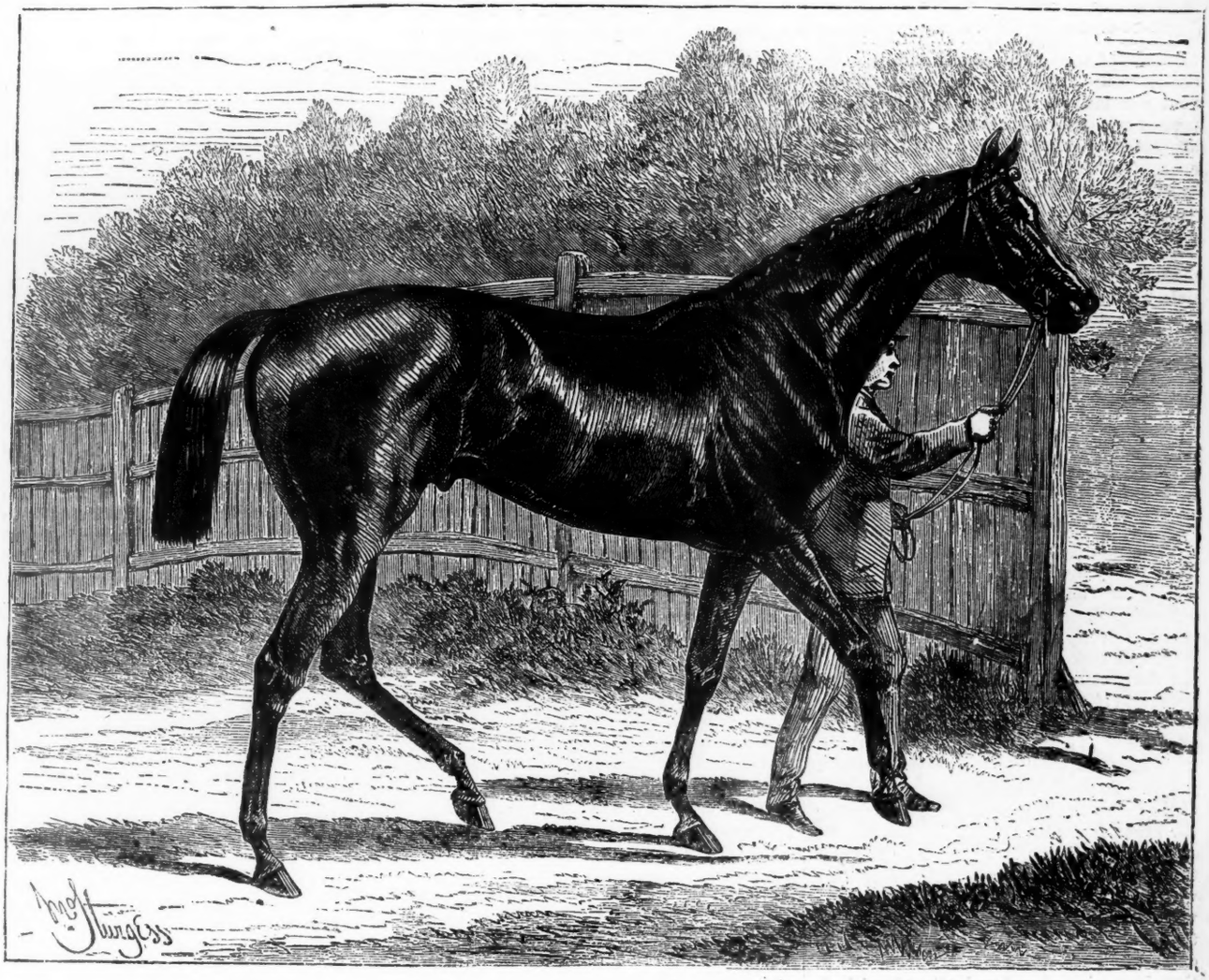
But there has all the while been the feeling that Jethro Tull was right in claiming that thorough *pulverizing* the soil was *the* great requisite of cultivation. And to secure this we have had a succession of implements devised, as cultivators, rotary diggers, rotary harrows, etc. Most of them have been valuable so far as they have helped towards dividing the soil, so as to provide a finer seed bed. But we are inclined to believe that Charles E. Sackett has now made such modifications and additions to the common plow, as to amount to a radical and most valuable change in its mode of operation and in the desirable results produced. Here is a general idea of it: First a surface plow which is readily and quickly adjusted to cut off two, three, or four inches in depth of the soil, and turn it well over into the bottom of the previous furrow. Following this, upon the same bearer or frame, is another plow, adjustable to take up a sub-furrow of any desired depth. But this second, or sub slice, is not merely turned over in a mass upon the top of the first one with only such breaking as the lifting and turning over will secure. Quite different. Upon the frame is an open-work wrought iron wheel or cylinder, say 40 inches in diameter, which follows upon and smoothes down in part the first turned slice of land, with its grass, stubble, weeds, etc. The second furrow is thrown *into* this revolving wheel, and carried round and round on its inside, among its teeth, and against its open-work bars on the rim and outer side, and it is so broken and pulverized that it drops out upon the buried sod or surface furrow. The result is, that the soil is pulverized quite as much as it could be done with roller and harrow, and without any trampling or packing by teams; it is left light and fine and in excellent condition for receiving seed. There is also provision for attaching both seed drill and fertilizer distributor. In brief, at one operation the soil is plowed, finely divided; sod, stubble, etc., buried, and seed sown. There are several simple, ingenious devices for raising and lowering the plows and wheels, for various depths, for turning at the side of the field, for self-transporting, etc., etc., that would need engravings and lengthy descriptions to explain them fully.

"The proof of the pudding is in the eating." We visited the New Jersey State Experimental farm last week, and personally tested Mr. Sackett's implements on stubble and sod. The soil was a heavy one, and owing to the long drouth was in bad condition. The trial was very satisfactory on that soil and under those circumstances. A single pair of strong mules worked it with apparent ease on a very hot afternoon. Probably three horses will ordinarily be required, except for light soils, or for shallow work. We found it quite as easy to handle and guide, as the ordinary plow. A riding seat is provided for lazy people, cripples, or invalids. From this trial of it, and a careful study of its mechanism, and the principles of its construction and working, we have strong faith that it will prove a most valuable implement for soil preparation—probably the largest advance in this direction made during a half century. Before giving it an unqualified commendation for general and immediate introduction, we shall, of course, desire to test it upon a greater variety of soils, in different conditions, as to moisture, tilth, toughness, sod, stubble, etc.

Early Frosts in the Garden.—Our gardens are often at their best in early autumn. We have a few days of early frost, in which the very tenderest things are killed off, and then follow days, often weeks, of the most delightful weather, in which the plants that have escaped the first frost, are at their best. It is very disheartening to the amateur, to see his beds of Coleus, and his Cannas, all limp and useless, while the hardier Geraniums seem to laugh at the disaster. So far as we have noticed, this is the usual experience, and it occurs so regularly each year, that it seems worth while to prepare for these early frosts, in order to prolong the enjoyment of the garden. These early visitations, though sufficient to kill the tenderest plants, are so slight that they may be easily warded off. Whatever may be placed over the plants to prevent radiation of heat, will answer. The taller the plants, of course the more difficult it is to protect them. We have preserved a bed of tall Cannas, by setting a still taller pole in the center, tying a sheet by its middle to the pole, and letting the sheet hang over the plants, its edges being supported by them. Beds of Coleus and other tender plants may be readily protected by newspapers, held up by sticks placed here and there in the bed. Indeed, in early autumn, the newspaper is a most useful horticultural appliance, not only in the flower garden, but in the vegetable garden. By a proper use of newspapers for a few nights—the early frosts rarely continue for more than three nights—the crop of tomatoes may be prolonged for several weeks; especially where the plants are trained, as we have so often advised, to a trellis or a support of some kind, the application of a shelter of newspapers becomes an easy matter.

A Convenient Fruit Ladder.

Mr. L. J. C. Young, Steuben Co,, Ind., finds the ladder here described vastly better and safer to use in picking fruit, than the cumbrous step-ladders. To make the ladder, take a pole 16 feet long, and 3 or 4 inches thick at the butt; remove the bark and slip a ring down to about 8 inches from the top, [a carriage bolt may be put through at the same place, ED.], to prevent splitting. The pole is then to be sawed or split in halves from the butt to the ring. The lowest rung should be 15 inches from the bottom, and spread the sides three feet apart. The other rounds, every 15 inches, will be gradually shorter; use an inch auger to bore the holes. The ladder is always carried erect; put the right arm over one round and grasp the next one below, and with the left hand grasp the one just above the head. Ladders of 12, 16, and 20 feet long, will be found convenient for trees of different sizes. In picking, Mr. Y. prefers a round split or rattan basket, with a stiff handle. A hook is made of a piece of heavy wire, about 10 inches long; this is attached to the handle by a loose loop, the other end being bent into a hook; the basket being hung to a branch or to the ladder, both hands may be used in picking. If not packed at once, the fruit is carefully emptied upon a layer of straw. In the "Notes for Orchard and Garden Work" we have mentioned the method of using a grain bag as a receptacle for picking fruit. When properly arranged, with a cross-stick to hold its mouth open, etc., it is so handy that many who have used it, will not pick with a basket. The bag is carried upon one shoulder and both hands are free for work.



MR. PIERRE LORILLARD'S THREE-YEAR-OLD COLT "IROQUOIS," WINNER OF THE "DERBY" FOR 1881.

The American Winner of the "Derby":—"Iroquois."

The most celebrated horse races in the world are those founded by the late Earl of Derby in 1780, which are run by three-year-old colts upon the downs near Epsom, a suburban London town in Surrey. The "Derby" is held on the Wednesday preceding Whitsunday, and is one of England's great holidays. It is regarded by the Englishman quite as regularly as the Fourth of July is by the American, though for very different reasons. Wherever the Englishman may be, he remembers Derby Day, as the home holiday next in importance to the Queen's Birthday. The attendance at the races is very large, and it is said that London literally "empties itself," the people making their way to the course by every possible conveyance. Not only are the principal stores closed, but the Houses of Parliament adjourn, and it is said that every horse within 40 miles of London is engaged a long time in advance. For a horse to win the "Derby" is to obtain a lasting fame among the horsemen of the world. By degrees this famous race has become international; it has been won by the French, and at last the prize is obtained by an American horse. Mr. Pierre Lorillard, of New York City, is one of the largest owners of race horses, and his colt, "Iroquois," was this year successful in winning the "Blue Ribbon of the Turf,"—an expression used by the late Disraeli in connection with the "Derby." This celebrated three-year-old colt was sired by the well-known "Leamington" and bred by Mr. A. Welch, of Chestnut Hill, near Philadelphia. "Leamington" was figured by us in June, 1870. He was imported by R. W. Cameron, Clifton, Staten Island, in 1866, and was sold in 1869 to Mr. Welch for $15,000. Several others of his get have acquired fame in this country, but it was reserved for "Iroquois" to win the "Derby." Mr. Lorillard bought "Iroquois" when he was a year old, and soon after sent him to England to be trained for the great race in which he has finally triumphed. He did some very good running when in his second year, but seldom was victorious. He surprised every one in last year's July meeting at Newmarket, and defeated nine speedy competitors for the "Chesterfield Stakes" on the day following. This year "Iroquois" was second for the "Two Thousand Guineas," but the laurels rest fairly upon him in the "Derby," where he met and triumphed over the best horseflesh the whole world could put in the field. "Iroquois" stands 15 hands 3 inches, is of a brown color, with a little white on the near fore heel, and a narrow blaze on the face. His strongest point is his shoulders, which are unusually deep; the feet are excellent, and the legs free from blemish. The neck is a trifle light, but well set. The accompanying engraving, taken from the "Illustrated London News," shows that the "Derby" winner is a handsome animal, and in every way built for rapid work.

Hints and Suggestions of how to do, in the easiest and best way, the various kinds of work upon the farm, in the garden, and within the house make up a large part of the *American Agriculturist*, and upon this we believe its great usefulness largely depends. The number and value of the labor-saving devices, etc., published, must be determined largely by the subscribers themselves. The greater the number sent, the more select will be the collection which is given from month to month. Now that the hurry of midsummer work is over, we hope that each one will sit down for a few minutes and give us an account of how he or she did this or that thing. If an engraving will make it clearer to the reader, a rough pencil sketch will enable the artists to do their work. Let us hear from every county in the United States, that all the readers in all sections may be benefited.

A "Rafter" Level.

"X. Y. Z.," Wahe Co., N. C., writes: "In this land of sand and violent rainstorms, we are compelled to resort to some means to prevent our land from washing away. The present accepted plan is to run terraces, which are perfectly level rows, about 30 or 40 yards apart, for which the 'rafter' level is used. This level is very easy of construction, and can be used on the roughest ground. It is made of three pieces—two are 10 feet long, $2^1/_2$ inches broad, by $1^1/_2$ inch thick, and one piece is about 4 feet long, of the same material. The two long pieces are joined together like the rafters of a house, and the short

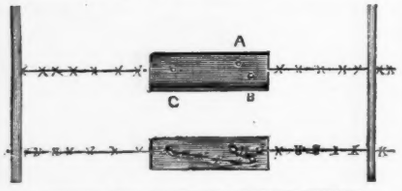
A HOME-MADE LEVEL.

piece is mortised into them about four feet from the joined ends. A common spirit-level is fixed on top of the short piece. To determine the accuracy of the instrument, take a perfectly straight-edged plank, 14 feet long, and make it perfectly level. On this put the feet of the rafter with the level in place, and if the bubble in the level stands in the center, the instrument is correct; otherwise shave off a little from one foot, and continue the trials until the level is perfectly adjusted. To use this instrument, put one foot of the rafter on the ground, and keep moving the other foot about until the instrument stands level; then move the rafter and put the 'hind' foot exactly where the 'fore' foot was, and 'level' the instrument in the same way as before. Continue in this way until the whole distance is levelled. Where it is desired to get a fall, a block of from one to three inches is fastened under the 'fore' foot. The foot with the block attached must always be placed down-hill.

"To fasten the level on the cross-bar we use a metal notch; this is let into the wood and screwed down. For the security of the level it is best to tie a string around the level and the bar, thus fastening them together. The feet of the rafter must be made broad, to prevent their sinking too much when used on plowed or other soft ground."

A Fence Wire Tightener.

Mr. "G. H.," Fayette Co., Texas, sends a simple method by which fence wire may be tightened at any point from the end. "The



A DEVICE FOR TIGHTENING WIRE FENCES.

appliance is as follows: Take two boards, about 24 inches long, lay them together and make three holes in them with a one-inch auger; three wooden pins are made to fit into the holes; one of which is driven through the hole, *A*, so that the boards will stand about one inch apart, which are now put on the wire and another pin is inserted in the hole, *B*. The boards are turned until the wire is as tight as desired. To prevent the boards turning back, the third pin is inserted in the hole, *C*, which then comes against the wire.

Relation of Railroads to Agriculture, etc.

BY MR. EDWARD ATKINSON.

Permit me to submit a second letter on the Railroad Question, as there is another aspect of the case that is not touched in my first:

Nearly every line of new railroad constructed, leads to some part of the country that had *no* railroad service before. Hence the saving compassed by the new construction is the saving of the difference between any railroad service at all as compared to the service by wagons. The farmers themselves can compute what that means better than I can.

I had occasion, however, not many years since, to see how much the Government of the United States had saved in the transportation of its supplies over the great plains of the West, and through the interior country, by the construction of the Union Pacific and the Central Pacific Railroads. The previous cost of this transportation of mere government supplies was all tabulated in the public documents and was easily ascertained; and it appeared, and was ultimately proved, that the Government of the United States had saved in a very few years after the completion of the Pacific Railroads, a sum far more than equal to the entire amount of Government bonds issued to the corporations that built those roads, in order to aid in their construction. In fact, the difference between what the Government was obliged to pay before the construction of the Pacific Railroad, as compared with the rate it has paid since, if applied to the service that had been done for it since the completion of that road, would amount to a sum greater than the entire cost of building the railroad from Omaha to San Francisco.

The act granting aid by the Government to the Pacific Railroad declared its purpose to be "to secure the use of the same for Postal, Military, and other purposes." As soon as the road was opened it began to do the work of the Government at from one-tenth to one-twentieth the rate that had been paid for the service by wagon teaming; saving at once more than the interest upon the bonds, and in the aggregate, up to the present time, saving a sum far greater than the principal of those bonds.

This railroad question cannot be justly determined unless this side is presented, and this side can only be presented *without prejudice*, by one who, like the writer, has almost no interest in their stocks, and who studies their case merely in its social aspect, and not as an advocate or counsel. From these considerations it may appear that even if there are grievances connected with the railroad service, that ought to be remedied, they ought to be remedied without appeal to legislation; lest in the attempt to cure the lesser evil a much greater one would happen. The various attempts to secure equality in rates, that have been made by State Legislatures up to this time, would have inflicted vastly greater harm by their enforcement, even to those who appealed for them, than could have happened without them; and this has become so apparent that they have been inoperative from the time they were enacted.

Any such vast change as that which has been effected by the railroad system cannot happen without some individual hardship; but there are compensations even to the farmers who think they suffer. Here are new forces now coming into action that will presently render the dependence of farmers upon railroad service much less than it has been. For instance, this new fact called "*ensilage*" may be as potent as the railroad itself in altering the condition and position of the farmer. If the re-discovery of the method of saving green crops in pits (which appears to be about two thousand years old, but which yet had the aspects of novelty when Dr. J. M. Bailey, of Billerica, called attention to it in his excellent little book upon the subject), will do half the service that it purports to offer, the condition of the farmer will be very greatly altered. If it is to become possible to substitute four cows to one acre in place of one cow to four acres, the effect of such a force must inevitably be to make each compact neighborhood almost self-sustaining in respect to every article of food, with the exception of the coarse grains.

Corn and wheat may continue to be manufactured by machinery on the great fields of the Western States. But man does not live by bread alone, he needs meat, potatoes, turnips, cabbages, the small fruits, and all the luxuries and comforts of life, besides milk, butter, and cheese. Dr. Bailey was almost called a "quack" for promising that all these good things could be made in great quantity on a little farm close to the city or town in which its market might be found; so near as to be almost independent of the railroad. But it begins to be apparent that he only will be the quack who, without having tried the method, pronounces it one that will not succeed.

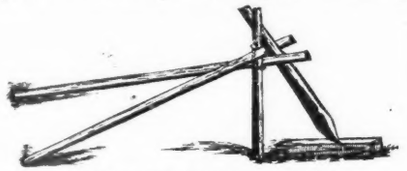
The outside observer, who is neither farmer nor railroad manager, but who can weigh testimony, finds ample evidence that the farmers of the East will not be subject much longer even to what they believe to be the abuse of railroads, and "ensilage" is one of the great forces that may make them independent. In fact, if practical men may ever be permitted to indulge in visions, the visions that may soon become accomplished facts, of vast increase in the productive power of land; quick transmission of persons; if we can send light over a wire; *if* we can attach to the same posts another wire by which to transmit power by electricity, so that each farmer may perhaps keep a power on tap in his barn to cut his own fodder, churn his butter, and do all the heavy work; *if* we are to accomplish here what is now being actually done in France, that is, operate an electrical machine by a small water-power on the farm and run the plows by the power developed by electricity; *if*, I say, all these things begin to be apparent, that are so bewildering that one even gets mixed up in attempting to describe them, and is not quite sure what relation his parts of speech bear to each other—why then perhaps the millennium of the economist is nearer at hand than it has been supposed to be; the time when intelligence and integrity and a very moderate amount of labor, will insure so good a subsistence that it will not pay to be rich. Trusting that these large figures, and distant, but perhaps very near visions, may serve to

call attention to a great evil of the present time, I submit them to you.

The evil to which I refer is for every man to rush to the Legislature and attempt to procure a statute for remedying small difficulties which, in the nature of things, are a part of progress, and which time only can cure. It is useless to try to cure petty evils by statute which will only be aggravated the more they are legislated upon. Let any man ask himself whether or not he would petition the average legislature to provide by statute what crop he should raise, what manure he should use, what breed of stock he should buy, and how much he should pay for it, whether or not he should ensilage his fodder; or who he should trade with, and on what terms; or what wagon he should use, and how much he should pay for teaming—in short let him consider that he may be as subject to meddlesome legislation as any one, and perhaps he will doubt that the average legislator is competent to operate a railroad.

A Device for Sharpening Fence Posts.

Mr. G. F. Caughton, Appanoose County, Iowa, sends a sketch and description, which shows a device for holding fence posts while they are being sharpened. It consists of a post driven firmly into the ground, bearing



A DEVICE FOR SHARPENING POSTS.

two poles 12 or 15 feet long, with their ends crossed and held to the post by means of a chain—the opposite ends resting on the ground. The post to be pointed is placed upon a sharpening block with its upper end resting in the forks made by the crossed ends of the long poles, chained to the upright post, as is clearly shown in the engraving.

The Care of the Hand.—Many persons, especially farmers, neglect their hands. Hard work will, of course, make the hands hard, but they need not on that account be untidy. A black line at each finger nail is not a mark of a "working man," so much as it is of a negligent one. No matter what his occupation, one should no more come to the table with dirty hands, than with a dirty face. To keep the hands in good order a brush is a necessity. A "nail brush" may be bought for a very small sum, and no matter what may be one's work, he can, by the use of this, keep his hands in very good condition. Rub the brush across the soap and scrub the finger nails, not only at the end, but at the base where they join the flesh, and if there are any other parts of the hands that need it, give them a scrubbing also. The daily use of a nail brush, and a careful paring of the nails before they get long, will enable the hardest worked farmer to keep his hands in a comfortable condition. The greatest trouble with the hands is from a splitting of the skin at the base of the nails, causing what are called "hang-nails;" this may be avoided by a little care. At each washing of the hands, and after they have been dried upon the towel, push the skin downwards away from the base of the nail, by using the end of another nail; that is, use the thumb-nail of the right hand to dress the nails of the left, and *vice versa*. The comfort that results from well kept hands is sufficient reason, not to mention neat appearance, for properly caring for them.

A Windmill for a Farm Shop.

Mr. Gustav A. Michael, Montgomery Co., Pa., writes: "In answer to your request of some months ago, I send a few rough sketches of a windmill which has been adjusted for doing shop work, as boring fence-posts, etc. I constructed the mill myself, and at a cost of not over five dollars. The windmill wheel was made as follows: I selected one of the large wheels from an old horse-power, and removed the rim so that only the hub portion and the spokes were left. These were bevelled off, and the wings or fans of the mill wheel were fastened to them by means of screws. The wings are 4 feet long, 20 inches broad at the upper ends, and 6 inches at the bottom, so that the wheel measures 8 feet in diameter. The gearing house, fig. 2, is made of 2 by 6 inch oak plank mortised together. Two large holes, for the adjustment of the shafts, the lower and larger, 5 inches in diameter, and the upper 3 inches, are cut somewhat to one side of the middle of the gearing house, so that the windmill may balance more perfectly upon the shaft, and therefore turn easily to the wind. The shaft is a one-inch iron rod obtained from an old mowing machine. There are two cog-wheels in the gearing house, by means of which the power and motion are transmitted from the windmill wheel to the shop below. The beam upon which the turning shaft rests runs through the middle of the upper portion of the shop, and is of oak 5 by 5 inches in diameter. There is a gearing wheel on the lower end of the shaft that is 11 inches in diameter, and connects with another 2 feet in diameter, which is fastened to the upper portion of the shaft bearing the auger, or other tool, to be used. The motion and general action of the mill is governed by a brake. There is also a lever by means of which the auger, etc., is raised or lowered when at work. When posts are being bored they are placed upon a carriage provided with four wheels, which can be readily moved along as desired. I intend to arrange this mill as soon as time permits to give power for sawing wood, grinding tools, pumping water, etc., etc."

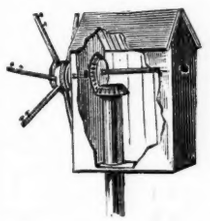


Fig. 2.—GEARING HOUSE.

The windmill is shown in position, with the interior of the shop in view, in fig. 1; the gearing house with the arrangement for shafts is shown in fig. 2, and the carriage and stand for holding the work are given in figs. 3 and 4 respectively.

Every farmer, from necessity, is more or less a machinist, and we have advocated from time to time that all should, if possible, have a shop in which they can do their work of repairing farm implements, and even of making new ones as they are wanted. There

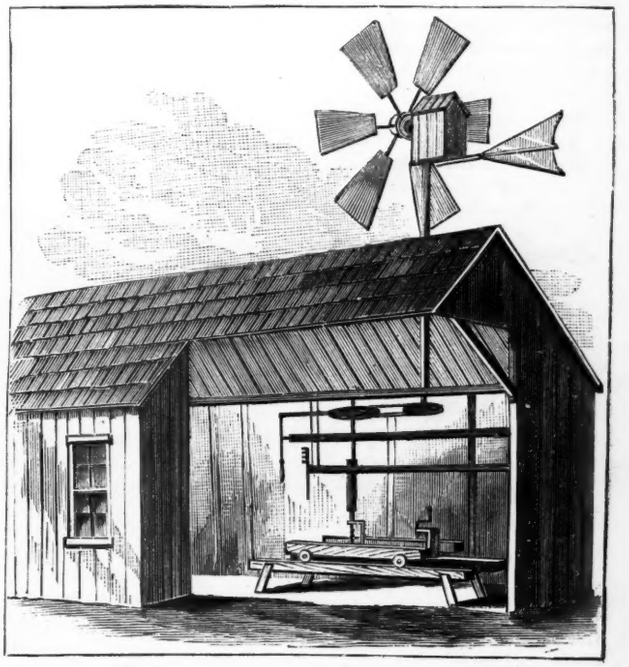


Fig. 1.—A WINDMILL AND INTERIOR OF SHOP.

is no doubt but that the wind could be utilized at a trifling cost as a source of power in doing much of the important work connected with a farm shop. If one can afford the outlay, and it is not very great, required to

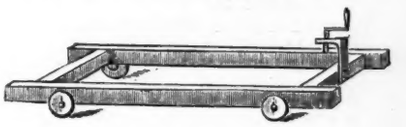


Fig. 3.—CARRIAGE FOR HOLDING POSTS.

purchase any of the many windmills now offered by the makers, he would no doubt have a more satisfactory wind engine than any he could make. But, as our correspond-

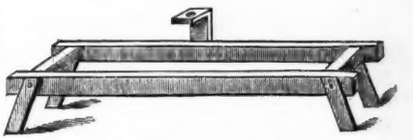


Fig. 4.—THE WORK-STAND.

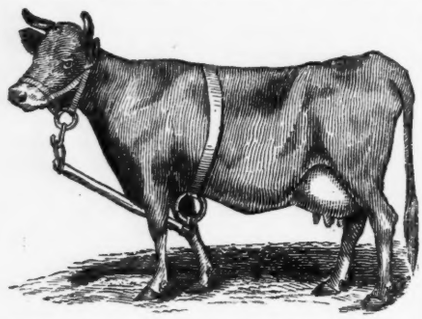
ent shows, those who do not care to buy a windmill, and there are many such, need not be deprived of the use of wind-power.

The Corn Crib.—The average corn-crib is not what it ought to be, either in size or security from vermin. Much of the labor of the year may go for nothing, save to feed a swarm of mice, if precautions are not taken to keep these little pests from the corn-crib. At this season, when the crib is usually empty, means should be taken to clear it of mice,

and then, if possible, cut off their access to the grain that is soon to be harvested. If there are any repairs to be made in the roof, siding, or floor, they should be made now, that all may be snug in the corn house, when snugness is of the utmost importance.

A Device for a Self-Sucking Cow.

Mr. J. J. Chester, Marion Co., W. Va., writes:—"Seeing in the *American Agriculturist* for April a drawing of a bit to prevent cows drawing their own milk, I am prompted to give you another plan for the benefit of your many readers, which is as follows: Put an ordinary head-stall on the cow, with a ring at the chin. A surcingle is put around the body of the cow, just behind the shoulders, with a ring at the under side. A stout piece of hard wood reaches from the ring at the chin to the one on the surcingle; fasten the



DEVICE TO PREVENT A COW SUCKING HERSELF.

bar at the chin with a light chain or strap three inches long. Secure the other end of the bar to the ring in the surcingle with a chain or strap 3 inches long. I think it preferable to the bit, as it is not so much in the way in eating or drinking, and any farmer can make the halter and bar at home without the aid of the gasfitter."—The engraving herewith given makes the device perfectly plain.

A Horse for Shocking Corn.

Mr. A. J. Hay, Racine Co., Wis., writes: "A handy horse for shocking corn may be made by taking a piece of 2 by 6-inch scantling, about 6 feet long, as a body piece, and

Fig. 1.—CORN HORSE, SHOWING THE BOTTOM.

fitting it with legs and wings as follows:—Near the front end place two good stout legs, either by mortising them in or by using an auger. Let them be from 2½ to 3 feet long, to suit the kind of corn, and give them spread enough to just pass readily between the rows.

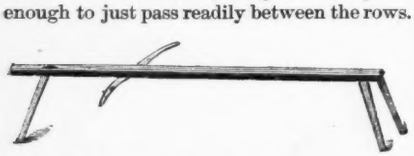


Fig. 2.—CORN HORSE IN POSITION.

Four and a half feet from the front cut a mortise in the center of the "body," 6 inches in length, for the hind leg, making the pin hole 3 inches from the front. This leg is two inches wide, with a shoulder 2 by 4 inches left on one side of the top, which is cut down to form a circle. Make the pin hole one inch from the center of the circle, in the shoulder. This allows it to swing up when drawing it from the shock, and fall in position again when free. The arms are made of inch boards, 3 by 12 inches in size. Round off the back corners of the inside, leaving the others square. Make the front side of the arms concave, and cut away the back side of the outer ends to correspond, leaving them about one inch wide at the ends. Bolt them loosely on the under side of the horse about 3 feet from the front end, so that the square corners touch when the arms are open."—Mr. Hay sent a model of his "horse," from which the engravings are made. Figure 1 shows the bottom of the horse, and in figure 2 it is seen in an upright position ready for use.

Sleep as a Farm Crop.

MR. EDITOR: We were at Pastor Spooner's to take tea, last evening, and a new crop came up for discussion, which may be profitable for some of your readers to cultivate more systematically. The old style tea-drinking, confined to about a half-dozen, outside of the family, is the nearest approach to social dissipation allowed in church circles in Hookertown. The modern festival, with its buskin performances, and other devices to filch money out of reluctant pockets for the support of the gospel, has not invaded these parts. Mr. Spooner says: "If you want church privileges, pay for them squarely, as you do for your government and your family expenses. A thrifty church should be as much ashamed of begging as a thrifty farmer." Dr. Blossom took the lead in the conversation, and when we were seated at the table, remarked: "Sleep, I think, is about the most profitable crop grown on the farm."

"How do you make that out," inquired Mr. Spooner. I thought men and women were the glory of our Connecticut farms."

"Very true, if they were only finished," the Doctor said; "but, alas! a large per cent of them, especially the women, are broken down in health, and mainly for the want of seven or eight hours of sound sleep every night. Sleep is quite as essential as food to vigorous health, and the bed and its surroundings should receive as careful attention as the table. In the olden time, when the habits were more simple, the food plainer, the houses better ventilated, and the demands of social life much less than now, the women were healthy, and large families were the rule, as they are now the exception. Unwholesome excitements were rare, and when nightfall came, deep sleep fell upon the household, and it remained unbroken until the morning. The aspirations of men and women were limited, and there was little outside of the farm to worry about. Farming was more of a routine business; there were fewer crops, fewer wants, and less money. Now the city has pushed its iron arms out into the country in every direction, and, in summer, our city cousins invade every rural region, and disturb the dreams of rural people with their boundless display of wealth. Our shore towns are dotted with villas, our harbors with yachts, and little steamers are crowded with pleasure-seekers all through the summer. Farm houses in more retired towns are open to summer boarders; splendid turnouts, with gay trappings, whirl along country roads; dog-carts and other odd vehicles abound; society is penetrated with foreign elements; picnics, festivals, chowders, exhibitions of all sorts are in order, six days in the week, and on Sunday the old meeting house, with its gay bonnets and bright colors, looks more like a flower garden than a company of devout worshippers. What average family with Yankee blood in their veins, is going to get seven hours sleep under all these social excitements?"

"Well, Doctor," inquired Mrs. Bunker, "the railroads are built; the folks keep coming—what are you going to do about it?"

"Do the best we can, Mrs. Bunker," continued the Doctor. "There is so much in society, and in our artificial habits, that sleep will no longer grow, as a wild plant, and take care of itself. We must cultivate it as we do corn and potatoes. There is no health without sound sleep; and thrift on the farm, as everywhere else, depends largely upon physical vigor. Sleep is a powerful medicine, which helps to cure irritability of temper, peevishness, uneasiness of any kind, like nervous dyspepsia. It is good for a broken spirit. We might change the hymn a little, without damage, and sing, 'Earth has no sorrow that *sleep* can not cure.' Sleep, to be perfect, and profound, and restorative, should be so prepared for, that not a single discomfort should interrupt it. We should get ready for it just as we prepare for a day's work—have the tools all ready and every hindrance removed."

"Well, how are you going to get it when it don't come?" inquired Mrs. Bunker.

"It will come," continued the Doctor, "if you get ready for it, like any other welcomed guest. The sleeping room, if possible, should be in the most quiet part of the house, above the first story, well sunned and ventilated, with as little furniture as possible in it—consecrated to sleep. Put away your feather beds and comfortables, as unfriendly aids to sleep, and wood bedsteads and bed-cords, with their untimely squeaking. Have solid iron bedsteads, with sheets and blankets that will take care of the perspiration, or, rather, prevent it, and keep the body at the most comfortable temperature. Rule your own house, and have a set time for going to bed, the sooner after nine o'clock the better, when every member of the household shall be ready for the main business of the night, no matter what is going on at the lodge, the hall, the ball, the temperance discussion, or the prayer-meeting."

"What is going to become of our duties to society?" inquired Mr. Spooner.

"A man's first duty to society is to take care of his body," responded the Doctor. "'Thou shalt not kill,' is a part of the decalogue, and neither man nor woman owes any duty to society that is not compatible with a sound mind in a sound body. Sleep is the one thing needful, if we would have either. What is a man worth to society with shattered health? Cultivate sleep, and be worth something while you are awake."

"I am glad you are so orthodox on sleep," interrupted Deacon Smith. "But I am afraid, Doctor, if Hookertown adopted your views, you would soon be without patients. I have followed your theory for thirty years, and have hardly had a doctor in my house. And sleep is just as important for our domestic animals as it is for men—in short, one of the best crops raised on the farm. It has a

very important bearing on the production of milk. Any excitement in the herd that disturbs their quiet always lessens the flow of milk. My pastures are provided with shade trees, where the cattle can lie down in summer during the day, and at night they are turned into the pasture, where they always have the choice of a dry, clean bed. In the winter they have a bedded stall to sleep in, and after their evening rations are given them the barn is kept as quiet as the house. Sheep suffer very much from want of quiet, but the dog law has helped that matter very much in thinning out the worthless curs that used to chase them. It is quite possible now, in the towns where the law is enforced, to raise mutton, lamb, and wool, and recuperate our pastures. In making pork cheaply, a good deal depends upon clean, dry quarters for the swine. The common proverb, 'the breed is in the trough,' is only a half truth. The other half is in the blood and in the sty. The common notion that any place is good enough for swine is a very expensive heresy. The pig takes a mud bath in summer to keep cool and to get rid of vermin, it may be; but give him a clean, dry place, and plenty of straw, and he will keep himself as clean as any other animal. If well fed, he will sleep a large part of the time by day as well as by night. The more sleep you can induce in the sty, the cheaper you can make pork."

This tea-table talk at the parsonage has a fair amount of common-sense in it. A perceptible change has come over our New England farms, in the last thirty years, in making provision for the comfort of our domestic animals. The old-style accommodations, foddering cattle at the stack-yard, which used to be severely handled in the *American Agriculturist* in the early days, though still in existence, has greatly diminished. Sleep was a difficult problem on the frozen ground, with the thermometer down to zero, and it took at least a third more fodder to keep the animal in good condition. As a matter of fact, all stock thus wintered fell off in weight. It deteriorated the stock, while it brutalized the owner. Now the model barn, and such are multiplying quite rapidly, is a tight structure, almost frost-proof, well ventilated, built over a manure cellar, where all the droppings of the cattle are composted with muck, peat, leaves, and straw, and turned to the best account. There is a large root apartment, or vault, on the stall floor, and roots furnish a part of the daily rations. The stalls are kept well littered; and abundant rations, comfortable temperature, and quiet, favor sleep. Milk production in such a barn is a possibility throughout the season, and occasionally a farmer is experimenting in making winter butter. On the whole, we concede the value of sleep as a farm crop.

Hookertown, Ct., August 1, 1881. } Yours to command, TIMOTHY BUNKER, Esq

Death of "The Jersey Belle of Scituate."—D. D. Bishop, Stock Editor of the "New York Pet Stock Bulletin," forwards us a letter from C. O. Ellms, the owner of this noted cow, announcing her death, on July 11th last, of milk fever. In June, 1880, we gave a remarkably fine portrait of this animal, with her pedigree, and asserted her claim to be the most famous butter cow then living. We are not surprised to learn from Mr. Ellms' letter that her death has caused general regret in the town of Scituate; he concludes by saying: "Of course I feel badly enough, and it is little comfort to know that she has left a fine calf by Sharpless' bull."

A Cheap and Convenient Corn House.

BY W. D. NORTON, LAPEER CO., MICH.

In return for many valuable hints received from the *American Agriculturist* in the past, I send you a drawing and description of a cheap and convenient corn house for a farm of average size. I think it was in 1857 that my double crib with "air-holes" in the middle was erected, and afterwards described with an engraving in the *American Agriculturist*. Your readers are welcome to this plan also. The old crib was still in good order last fall, but was too small for my use, so I took the two halves apart, and made a room 8 by 12 feet between them, and put up another crib on the back ends of the two. The corn house is 14 by 15 feet at the bottom, and flares 12 inches at the eaves. The posts are eight feet high on the outside, the cribs three feet

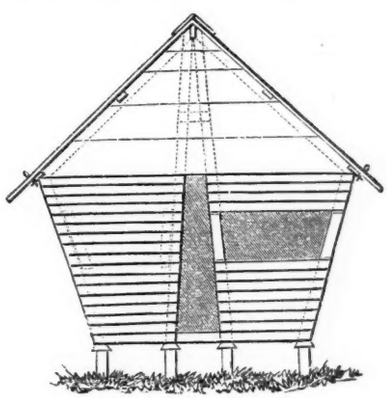


Fig. 2.—THE OLD HOUSE.

wide at the bottom, and four feet wide at the top. There are four doors upon the outside through which the corn is shovelled from the wagon. The doors need merely to be shoved up to the top, and then dropped half an inch, when the projecting cleats will hold them in place. To fill the crib thoroughly, a few baskets of corn can be carried inside of the door and emptied over the partition. The interior of the corn house has a smooth floor, and close sides to the hight of 22 inches, above which are slats, the same as on the outside of the cribs. There is a door left in the inner side of each of the cribs which may be closed with short slats set in place as the corn is filled in, and can be slipped out as the corn is wanted. These doors are 22 inches wide, and are large enough for one to step readily into the cribs when the slats are removed. The inside studs (shown by the dotted lines in the engraving) are fastened to, and support the rafters. The studs and rafters consist of 2 by 4-inch scantling. The corn house is set upon logs, and is high enough to let the fowls pass under it freely, so that no grain is lost. The collar-beams are handy for suspending traces of seed corn. This corn house has a capacity of over six hundred bushels. [We find the original corn house was published in the *American Agriculturist* for December, 1864. The engraving is reproduced here, in which it should be said an amendment was made at the time by putting posts under the house, with tin pans bottom-side up over their tops, to keep the rats and mice from getting into the corn house.—ED.]

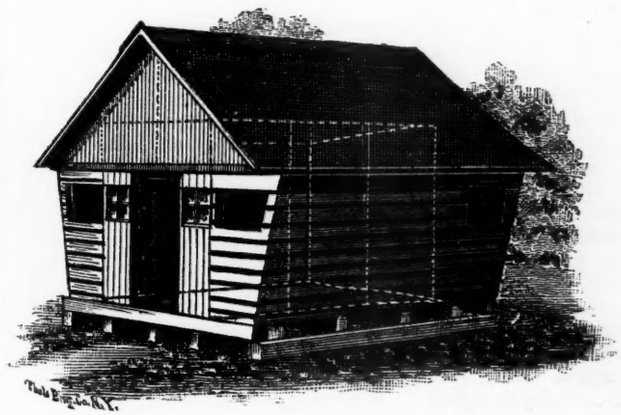


Fig. 1.—THE CORN HOUSE AS REMODELLED.

Saving Corn Fodder.

BY MASON C. WELD.

It matters not whether it be corn fodder or fodder corn which we desire to save, September in the Northern States is the month when it must be done. Frosts are likely to come any time after the tenth, and any that come after the fifteenth are likely to be "killing." We can usually trust corn out until the latter date, but then—look out.

It is a wonderful, if not inexplicable change which takes place. The plants stand at evening strong and vigorous; the leaves green—only the lower ones turning yellow a little, and the whole plant looking substantial and surely as capable of withstanding a little frost as the grass, or the turnip or cabbage leaves. Yet one single hard frost—a "black frost," as the farmers say, changes the internal structure of the plant. The first warm airs of the morning change its color to a dull, dark green. The leaves lose their stiffness and droop; as soon as the sun strikes them they become flabby and watery, and soon shrivel away. Their nutritive value is gone; if dried, cattle will not eat them, and they crumble at a touch. If they do not dry, they soon rot. When frost threatens—when the wind is in the west or north-west and the day is clear, promising a clear night, after rainy weather or after rain has threatened—it is time and high time to bestir ones-self to save the corn fodder. Corn will often stand a light frost, and we generally get one or two of these before one comes that does real damage. So the amount of corn left standing and in danger ought not to be very great. There are to the experienced observer (and every farmer has an eye to the weather which should entitle him to that designation), premonitions of an approaching black frost which rarely mislead. Before it comes every spear of corn should be cut. It is best, of course, to cut and stook the corn at the same operation, but if worst comes to worst, it is enough simply to cut it up and drop it in convenient heaps for

handling. A few hands make lively work, and corn fodder cut in the afternoon before a frost, is saved. The least degree of wilting is sufficient to prevent the bursting of the cells and breaking up of the internal structure of the plant by the frost. I have been amazed to see the leaves of corn fodder cut up after sundown, and apparently not wilted at all, perfectly uninjured, when those upon that left standing were ruined. Had the cut stalks been laid upon the ground, I might have thought the earth had in some way protected them, but they were stooked up close to that left standing, and apparently even more exposed. It is evident, therefore, that the wilting is not altogether due to the evaporation from the heat of the sun, but when the supply of moisture from the root is cut off it is felt in the leaves, and either through transpiration or moisture, or relief of pressure, the cells of the leaves expand without bursting under the influence of frost.

I have not made special experiments to ascertain whether this effect takes place immediately, or only after sufficient time has elapsed to allow a perceptible amount of moisture to pass out of the cells by transpiration, but I am so sure that cutting saves the fodder that I would, to save the fodder, work late into the night simply cutting and laying the corn in armfuls on the ground.

The subject of stooking corn has been so often discussed, that it is hardly worth while to dwell upon it. If frosts hold off so that the cool October nights have come before the fodder is cut, the stooks may be made quite large—so large that it will require two men to bind them. I have found withes of single willow rods most convenient bands. The fibres are broken by twisting at some odd time, and as I use them they save time and labor in various ways. The binding is quicker done, and is very strong. The size of the stook depends very much on the hight of the fodder, and whether it is in drills or broadcast. The former is much stiffer and easier to handle, and stook up like field corn. The latter is apt to be weak and soft. I always sow corn for fodder in drills, and so cannot advise as to handling broadcast corn fodder. Stooks so large and tightly bound that they would mould and spoil if put up in August, or even the first of September, will cure beautifully in October, and, as already intimated, there is little danger after the first hard frosts that corn fodder will not cure well.

Large stooks are advantageous because a larger proportion of the fodder corn comes out bright and green. That on the outside is bleached, and although I never could see that it made any difference in the consumption of the fodder, yet I prefer to see as large a proportion as possible looking fresh and green.

I have great faith in corn fodder, and am heartily glad that ensilage has waked up such an interest in it, but have yet to learn that proper curing in the stook is of any damage to its nutritive ingredients. It would be remarkable, certainly, if a portion of the woody fibre did not become indigestible through drying, but we can hardly consider woody fibre, whether digestible or not, as nutritive.

Whitewash the Stables.—A healthful mode of cleaning the stables and sheds is to give them a coat of lime wash, applied hot. A quantity of the wash may be made by slaking a bushel of lime in a tight pork barrel. Only enough hot water should be used to make a thick paste. After the lime is slaked fill the barrel with water, and after standing for a few hours apply the contents to the stables. A small force pump can be used to advantage for this work, but if not at hand, a whitewash brush must be freely employed. There is no danger of using too much, and no great care to keep the wash from the floor need be exercised. Dash it on, especially in the corners.

Wood and Wire Gates.

Mr. S. G. Howison, Spottsylvania Co., Va., sends a drawing of a gate, made of wood and wire, which he constructed two years ago, and finds very convenient. He writes: "To make it, obtain three uprights, 3 inches by $1^1/_2$ inch, $5^1/_2$ feet long, and four strips, 3 inches by 1 inch, 11 feet long. Cut shoulders in the ends of the strips, and saw out corresponding notches in the uprights. These I

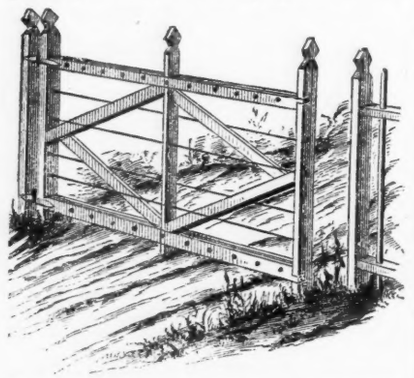


Fig. 1.—A NEAT GATE OF SCANTLING AND WIRE.

make $1^1/_2$ inch, or half the width of the strips. The bottom notch is $2^1/_2$ inches from the end of the upright, and the upper one $9^1/_2$ inches from the top end. Fit the strips into the notches. There is then a space of one inch between the strips, into which put inch strips, so as to make all solid, and fasten together with carriage bolts. Braces 3 by $1^1/_2$ inch are inserted, and held in place by bolts or wrought nails. Bore as many holes in the end pieces for $^1/_4$ inch eye-bolts as it is desired to have wires. Twist the wire firmly into the bolts on one upright, and secure the

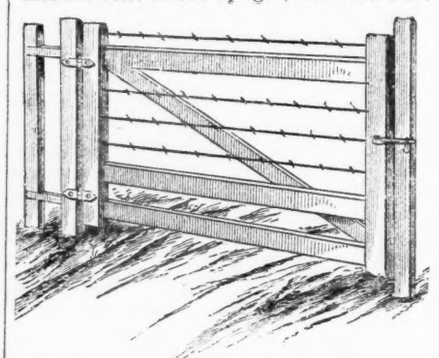


Fig. 2.—A CHEAP GATE OF BOARDS AND WIRE.

other ends to the corresponding bolts on the upright at the opposite end. In stretching the wires, pass them alternately on opposite sides of the center piece, and fasten in place by staples. This will, in a measure, prevent warping. By screwing down the bolts with a wrench the wires may be drawn as tightly as desired. The hinges are to be put on with bolts, and any sort of fastening may be used that is most convenient. Barbed or smooth wire may be used. This is a neat gate, and, being light, does not sag badly."—The gate, complete, is shown in figure 1.

Another form of gate in which wire is used is sent by J. S. Wilson, Whiteside Co., Ill. It is shown in fig. 2. The materials required are two uprights, four boards, and four pieces of wire of a length equal to the width of the gate. The position of the parts and the method of construction are clearly shown by the engraving, which is given above.

Horse-Shoeing.

BY D. D. SLADE, M. D., PROFESSOR OF AGRICULTURAL ZOÖLOGY, HARVARD UNIVERSITY.

The new asphalt pavement at my entrance door, softened by the sun's rays, receives and retains the imprint of each horse's feet as they come up, for my inspection, and I have been much surprised at the number which are shod, at this season of the year, with heavy calkins, and that too, when the animals are used solely for the saddle or for light draught. These impressions thus unintentionally left behind, have led to a certain amount of cogitation and have induced me to offer a few observations, which, though laying no claim to originality, may bear perusal on account of the importance of the subject to the agriculturist as well as to every owner of the horse.

Horse-shoeing, in the estimation of many intelligent people, is invested by certain mysterious principles, a knowledge of which they have neither the courage nor the disposition to acquire. They are bewildered by the numerous theories and arguments which are advanced for this or that mode of procedure, until they give over the subject in despair, and leave it in the hands of those who know even less than themselves. This obscurity, however, vanishes, if, laying aside all theories, the matter is presented in a simple and intelligent manner, based as it should be, upon Anatomy and Physiology.

Let us consider, in the first place, whether shoeing is necessary in all cases, and if necessary, how it shall be done. In the undomesticated condition of the horse, the equilibrium between the growth and wear of the hoof, which is but a horny appendage to the skin, is exactly maintained, but when subjected to labor upon hard and stony roads, this balance is destroyed, and the wear exceeds the growth. Hence arose the necessity of providing a defence against this excessive wear, resulting in the application of a metallic rim to the edges of the ground surface of the hoof. Such was the origin of the art of the Farrier. Under certain circumstances, however, as in strictly rural districts, upon soft and sandy roads, this excess of wear does not occur, and I am persuaded that in many cases shoeing might be entirely dispensed with, much to the relief of man and beast. Especially in the case of a young animal that has never been brought to the forge, the feet are eminently fitted by nature to a certain amount of hard usage, and we but blindly follow a custom when we subject him to the constant wearing of shoes. Even during the winter months, and upon slippery roads, the unshod horse will in most cases do his full share of labor, as any one can testify who has had experience.

The preparation of the hoof for the shoe where this last is actually required, is of vastly more importance than the particular

kind of shoe, and necessitates, first and above all things, the proper levelling of the hoof. When the unshod foot comes to the ground, every portion of its surface sustains some share of the weight, and also undergoes an amount of wear. The moment, however, that a shoe is applied, the weight is unequally distributed, especially when armed with high calkins, and the growth of the horn exceeds its wear, obliging the removal of the shoe at stated intervals, and the reduction of the foot to its normal condition.

In the young animal, shod for the first time, we have the appearances presented by a perfectly normal foot, which requires no preparation whatever for the proper application of the shoe, beyond slightly levelling with the rasp the ground surface of the outer crust. In the case of the horse that has previously been shod, it will be found that in the great majority of cases, the excess of horn which is to be removed exists at the toe. The wear at this point is prevented by the firm nailing of the shoe, and the consequent absence of all attrition, while at the heels, constant friction goes on between the two opposing surfaces, owing to the non-use of nails, and modifies the growth. The amount of this friction may readily be seen by examining the foot surface of any iron shoe that has been worn for the usual length of time. In so important a matter as bringing the foot to a proper level we must be governed by certain rules. Any excess of growth at the toe renders the pasterns more oblique, and consequently throws greater weight upon tendons and ligaments at the posterior portion of the limb, whereas too great hight of heels throws undue violence upon the bones and joints of the extremities. Both of these conditions must be guarded against. Sufficient accuracy of level may be attained by the experienced eye, either in looking across the upturned foot, or by viewing it on the ground either from the front or at the side of the animal. In this last position the ground surface of the foot should present a level parallel to a line drawn transversely to the direction of the pasterns, or what, perhaps, may constitute a more practical rule to the majority of readers, the surface of the outer rim or crust of horn should be brought to a level with the firm, unpared sole. The sole requires no reduction whatever, and should be left untouched. Nature provides, by a process of exfoliation, for any excess of growth, and it needs no argument to convince the unprejudiced that we cannot improve upon her plans. Those who advocate the removal and paring out of the sole for the purpose of giving a supposed elasticity to this part, forget that, by so doing, they take away the natural defence against injury and disease, for which no substitute can be employed.

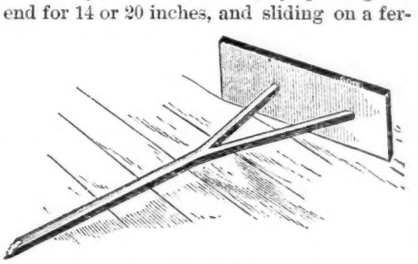
The frog is also to be retained in its full integrity, requiring neither paring nor cutting, however great the temptation to do these may be. The almost universal custom of destroying the natural buttresses which exist at the posterior portions of the foot by cutting deep notches in them is as irrational as it is barbarous. No process could be devised which would lead more speedily or surely to the contraction and consequent destruction of all the tissues of this region, than this "opening up of the heels." I have never yet met with the man who could offer a satisfactory reason for this mutilation of the foot.

Rasping the crust of the hoof should never be allowed. The removal of the external horny fibres exposes those beneath to atmospherical influences when they are not fitted for such exposure, whereby the crust is weakened, rendered brittle, and liable to crack. Moreover this process of rasping removes the natural external polish which gives such a beautiful surface to the healthy foot, and which no substitute in the form of oil or blacking can supply. The very existence of such a polish or varnish is ignored by many farriers, who mercilessly rasp the entire wall, and think to conceal their ignorance by giving it a coat of some vile compound.

Thus it is seen to what a simple and perfectly plain operation the preparation of the foot for the shoe is reduced, and it is this preparation which, after all, constitutes the important part of the science of shoeing. If no mutilation of the foot is practised, either before or after the application of the shoe, it cannot be doubted that the organ is in a condition best fitted to withstand the amount of labor and strength required of it. The form and kind of shoe, the fitting, the treatment of limbs, etc., are all important, but secondary.

A Convenient Barn Scraper.

Mr. L. K. King, Tioga Co., Pa., writes: "The accompanying engraving shows a scraper that I have been using several years, and think it very convenient. It is made of a hard-wood board, (maple, oak, birch, or ash will do,) two feet long, and five or six inches wide, each edge being bevelled on opposite sides, at an angle of 45 degrees—one for pushing and the other for pulling. The handle is a little sapling, five feet long, with a crotch for braces to fit into the board, and the opposite end shaved off smooth for the hands. If a suitable stick for the handle can not be found, one may be made of any tough wood, as hickory, oak, elm, or ash, by splitting one end for 14 or 20 inches, and sliding on a fer-



A CHEAP AND DURABLE SCRAPER.

rule, winding the crotch with wire or securing it with a small carriage bolt at the point where the split begins; then trim the split ends to fit ¾-inch holes in the board. Such a scraper will be found more durable than one with a simple straight handle, and more useful, owing to its double construction, being bevelled on each edge, one side to be used for pushing and the other for pulling.

Insure the Farm Buildings.—A building may be burned at any time, involving the loss of the accumulated property of many years, and but few farmers can afford to run such a risk. All can afford to, and should have, their buildings insured in some good company. The person holding a policy is always more watchful—observing the wise precautions enjoined by the insurance company. Explosive oils will not be used, or if employed, they will be with greater care. Smoking will not be indulged in upon the hay mow, as frequently as when no policy is rendered void by such acts. Thus there is a double safety in being insured, and it pays, unless the owner is rich and can afford to be his own insurance company, and even then it may be wise to have one's property insured.

Making a Stone Boat.

Mr. "A. W. S.," Steuben Co., N. Y., writes:

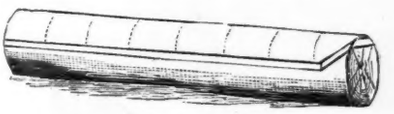


Fig. 2.—HOW TO CUT THE LOG.

"We were in need of a stone boat (or "drag," as it is called in some places); not having any plank at hand we selected a red beech log, sawed it the required length, and with a chalk line marked out the plank on one side of the log.

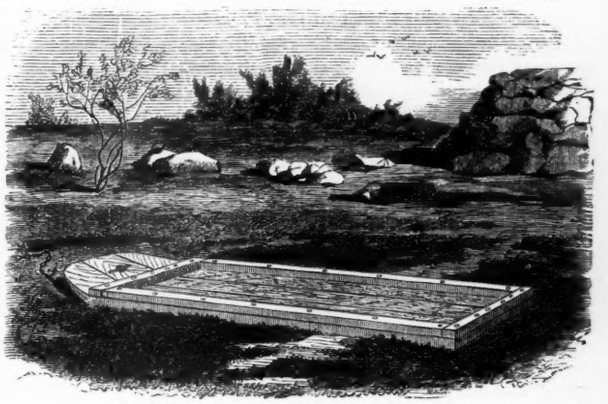


Fig. 2.—THE STONE BOAT COMPLETE.

With a cross-cut saw, we cut down to the line intended for the upper edge of the plank, and carefully split out the blocks of wood. The log was turned over, and the same cutting done on the bottom. Pieces of plank were fitted on each end to keep the bottom planks together (we needed two), and narrow strips were put on each side with a stout iron staple and a hook bolted on the front end to fasten an ox-chain or whiffletree to, and the boat was completed to our satisfaction—and some stove wood was made ready also. The planks need some dressing to make them smooth."—The method of cutting the log is shown in figure 1. The stone boat complete is seen in figure 2, where the draft attachment is by a pin and a short chain through a hole, shown

Fig. 3.—THE ATTACHMENT FOR DRAFT.

in enlarged view in figure 3. Every farmer should have one of these handy vehicles, which cost but a trifle, and can be made in the shop on a rainy day. Bags of grain, harrows, plows, etc., can be taken with ease across soft plowed ground, if a stone boat is at hand to be used for this purpose.

Hints and Helps for Farmers.

Mr. W. E. Morton, Grand Forks Co., Dakota, sends sketches and descriptions of some valuable devices for farmers. Figure 1 shows

A FEED BOX for a horse that is in the habit of throwing the grain out of the box, or, by getting his mouth too full and swinging his head around to one side, wastes a large part of it. This box is so arranged that he can get only

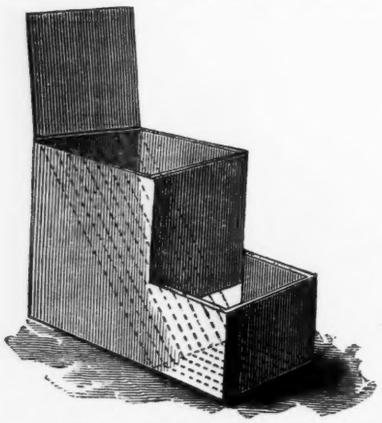


Fig. 1.—A SAFETY FEED BOX.

a few oats at a time, and they will run down within his reach until all have passed through. The space between the upright board and the slanting one should be about 1/2 inch. This size may vary considerably; the one sketched by Mr. M. is 2 feet by 10 inches on the bottom; the lower part 6 inches, and the upper 18 inches in hight. The construction of the feed box is made plain by the engraving. Another

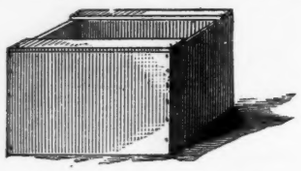


Fig. 2.—ANOTHER FEED BOX.

manner of preventing horses from throwing their grain out of the feed box is shown in figure 2. This is accomplished by nailing a strip of board on the sides of the common feed box so as to project 1 1/2 inch inside.

A DITCHING APPARATUS that is used for making furrows or water courses in sown fields is shown in figure 4. Mr. "M." writes: "The prairie here is so nearly level that the water does not all run off of itself unless some such means are taken to carry it away. The ditcher is made as follows: Cut a 2 by 16 inch plank 12 feet long, in two in the center, and fasten the halves together in a V-shape, using

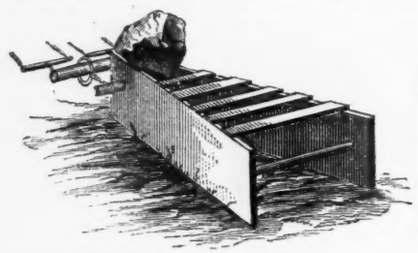


Fig. 3.—A DITCHING DEVICE.

round poles for braces. It should be two feet wide at the hind end with boards nailed across the top. A piece of hard-wood 2 inches in diameter and 10 inches long is put through near the front and upper edge, by which to draw the ditcher. A weight of 150 lbs. is fastened on the front end, and the driver stands on the hind end, keeping it from tipping.

Garget: Its Causes, Symptoms, and Cure.

BY MANLY MILES, M. D., "HOUGHTON FARM," MOUNTAINVILLE, ORANGE CO., N. Y.

"Garget," "Mammilitis," and "Inflammation of the Udder," are names applied to a troublesome and often serious disease, that occurs most frequently in cows, although ewes, mares, and sows, are sometimes affected with it. It is more likely to make its appearance about the time of parturition, when the udder is taking on an unusual activity in establishing its natural function of milk secretion. Among the many

Causes of the Disease

may be enumerated: External violence, as in blows or bruises of the gland; lying upon cold, damp, or stony ground; exposure to currents of air during cold storms; irregularities in diet, and particularly a supply of an abundance of rich and succulent food, when the system is in a plethoric condition, at which time the healthy congestion of the milk-secreting organs, that accompanies the establishment of their function, may be readily transformed into a condition of active inflammation. Neglect to relieve the distended udder of the milk secreted, or harsh usage in milking, will tend to favor the tendency to diseased action. Young cows are more liable to the disease, but old ones are not exempt from it, particularly if they have been affected with it in former years. An hereditary predisposition to the affection is not to be overlooked, and care should be taken, in such cases, to avoid all exciting causes.

The Symptoms of the Disease

are obvious, and should not escape attention, consisting, as they do, of heat, redness, and swelling, with pain and tenderness in one or more quarters of the udder, the entire gland being seldom affected. These local symptoms are included in the popular expression, "caking of the bag," which may be more or less severe. The secretion of milk is diminished, and it is changed in its physical properties, so that it "curdles" in the udder, the fluid, when drawn, being whey-like, mixed with clots, and sometimes with blood. Indications of a general disturbance of the system are added to the local symptoms in some cases, the bowels being either too loose or too constipated, the urine scanty; and chills, more or less marked, which are followed by fever.

Course of the Disease.

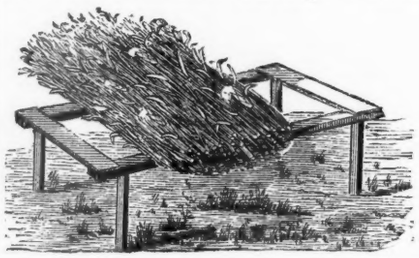
In mild cases the inflammation gradually subsides, and the natural function of the gland is fully restored. The disease may, however, result in the filling of the secreting lobules and milk ducts with the products of inflammatory action, and the gland itself, or parts of it, may be transformed into a fibrous, fleshy mass, that contracts or wastes away, as the inflammation disappears, so that the affected part is smaller than when in a healthy condition. This change may be more or less complete in portions of the udder, and the usefulness of the gland is correspondingly impaired. Hard lumps may form in the udder that finally suppurate, and the matter (pus) may be discharged internally into the milk ducts, or externally through the skin. In some cases gangrene (mortification) may follow and destroy a part of the udder. When there is any marked change in the structure of the gland from the severity of the inflammation, the milk-secreting function is seldom fully restored.

Treatment of the Disease.

If the first indications of the appearance of the disease are promptly attended to, the simplest treatment will be sufficient in cases not showing the constitutional symptoms already mentioned. The cow, from the first invasion of the disease, should be milked several times each day, care being taken to remove all the milk by continued stripping, and the udder should be thoroughly bathed with warm water. If, from the extreme tenderness of the gland, the milk cannot be drawn by hand, a milking-tube should be used. The fever, if present, should be relieved by a dose of Salts (1 lb. to 1 1/2 lb.), and Tincture of Aconite, 20 to 30 drops, with Nitre (Saltpetre), 6 drams, may be given with advantage two or three times a day. Only dry feed, with but little water, should be given until the inflammation subsides. A broad bandage, supporting the swollen udder, with holes for the teats to pass through, and fastened over the back, will relieve the strain from the increased weight of the gland, and at the same time furnish the means of applying a soothing poultice of Hops, kept wet with warm water. Other materials for the poultice may be used, but the hops are preferred for their lightness, and anodyne properties, and they are not liable to irritate the inflamed surface should they get dry. Extract of Belladonna is often applied to relieve the pain and tenderness, and from its relaxing effect on the orifice of the teat, it favors the escape of the milk, which, if retained in the udder, becomes a source of irritation. Friction of the inflamed surface with the Belladonna, before the hop poultice is applied, will often be desirable. Iodine ointment may be rubbed upon the hardened lumps, to aid in their dispersion. If matter forms, the knife should be used to give it a free discharge, and if gangrene (mortification) takes place, the parts should be washed with a solution of Carbolic Acid or Chloride of Zinc. Nourishing feed with tonics should be given to keep up the strength of the patient. This serious termination of the disease is not, however, likely to occur, if the treatment in the early stages has been promptly and judiciously performed.

A Husking Rack for Corn.

A description of a convenient "horse" or rack for husking corn comes from Mr. J. G. Johnson. The sides are made of inch boards 4 or 5 inches wide and 10 feet long. A board



ten inches wide and two feet long is nailed on each end to serve as seats for the huskers. The legs are two feet long, and should be stout and securely fastened to the frame. The shock of corn is laid across the middle of the frame, as shown in the above engraving.

The Bell-Flowers—Tenore's.

Our cultivators of flowers, as a general thing, strive to grow the greatest possible variety, and are always on the look out for novelties. This is all very well for those who find pleasure in it. But we think it would better suit the taste of many flower-lovers to take up as a specialty, a genus or a family of plants, and endeavor to become proficient in these. Take the Lilies for example; in the cultivation of these, Elwes in England, and Hanson in this country, have each a world-wide reputation, as special growers of Lilies. We do not advise every one to grow these, as there are many other plants that can be cultivated with as much satisfaction, and less expense. The Chrysanthemum, for example, is a capital plant for a specialty; in England its cultivation is carried to such an extent that there are several Chrysanthemum Societies for the encouragement of the culture of this plant. We were led to suggest the satisfaction that may come from this kind of culture, by visiting, not long ago, a garden in which a specialty was made of the Campanula, or Bell-flower. Those who have never seen a collection of these plants can have little idea of the great variety and beauty they present. The Bell-flowers include both biennials and perennials, and plants varying from six inches to three or four feet in hight. The delicate and most graceful Harebell, makes a strong contrast to the stately Canterbury Bells, and other tall growing kinds. They present a great variety of shades of blue, some having the most beautiful tints of this color, and in some cases there are white flowers. In the collection referred to, was a Bell-flower new to us, Tenore's Bell-flower (*Campanula Tenoreana*), in which the small, deep-blue flowers were produced in the greatest profusion. The engraving shows a branch from a plant about 18 inches high. The individual flowers are quite deeply-lobed, with very acute divisions. In marked contrast with this was the Great Bell-flower (*C. grandiflora*) and many others, among them some curiously doubled varieties. We cite this collection of Bell-flowers as an example of what may be done with many other plants. Those who have the taste for it will find greater pleasure in devoting their chief attention to some specialty, which they may do without altogether neglecting the growing of other plants.

TENORE'S BELL-FLOWER (*Campanula Tenoreana*).

The Pale Corydalis.

The Fumitory Family is not a large one, but it furnishes several valued ornamental plants, among which is, perhaps, the most popular of all our perennials, the "Bleeding Heart" (*Dicentra formosa*). We have native species of *Dicentra*, but none so showy as this from Northern China. The name, *Dicentra*, refers to the two spurs which each flower has at its base. A related genus is *Corydalis*, the name being an ancient Greek one for a plant of the family. The flowers in *Corydalis* have only one spur at the base, and thus appear to be one-sided. We have in the Northern States two or three wild species of *Corydalis*, but they do not seem to be well enough known to have received any popular name. There are one or two species in England, which are no better off as to common names than ours, and an English botanist has tried to popularize the botanical name, *Corydalis*, by altering it to "Corydal." Our native species are biennials, but there are in other countries perennial species, a few of which have found their way into our gardens. The "Noble Corydalis" (*C. Nobilis*), from Siberia, is a very interesting and showy plant, and remarkable for its short duration. It appears in early spring, flowers, and completes its career in a few weeks, and then dies down, nothing being seen of it until the next spring. Quite different in its manner of growth is the Pale Corydalis (*Corydalis pallida*), from the north of China, which is one of those satisfactory plants that bloom early, and continue in flower all summer long. In the engraving we can only show single stems, with the shape of the leaves and flowers, which are here given about the natural size. To get a proper idea of the plant, one must imagine a clump a foot or more across, made up of a great number of such stems. The handsomely cut foliage is of a pleasing pale green, and the flowers, which are borne in great profusion, are of an exceedingly delicate pale yellow. While there is nothing very striking about the plant, it is a very useful one in the garden, on account of its continuous bloom. In this respect it resembles its relative, the "American Bleeding Heart" (*Dicentra ex-*

THE PALE CORYDALIS (*Corydalis pallida*).

imia), figured by us in November, 1869. That is also a most constant bloomer, producing its rose-pink flowers all the season through. This oriental yellow-flowed species resembles our native, not only in continuous bloom, but the two are much alike in size and habit, and will make excellent companions in the garden.

The Revival of Peach Culture.

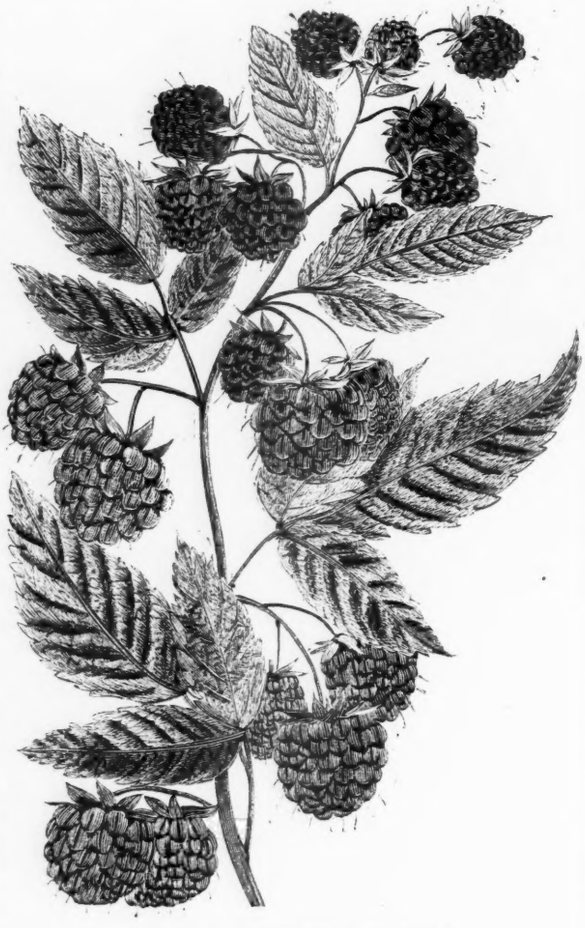
Most persons of middle age can recollect the time when New Jersey was the great peach district, and held the place that Delaware and the neighboring counties of Maryland and Virginia now do, as the source of the market supply of peaches. At that time, fine peaches were common, not only in the Middle States, but in New England. The Yellows, the Borer, and the Curculio might each have been borne with separately, but coming all at once, and at a time when the means of combating them were little understood, cultivators gave up, and for a long time peach culture in these northern localities was practically abandoned.

Within a few years there has been a great change in this respect. In parts of New Jersey, and in some of the eastern counties of New York, notably Ulster (the western counties having generally continued the culture), we hear of recent large plantations of peach trees, and there are portions of Pennsylvania where large crops are promised for this year. One of the reasons for the revival of peach culture is the great number of valuable native varieties that have been produced. Another reason is that growers have learned to regard the peach as a short-lived tree, and not to expect it to last a life-time. A well-known grower once told us that he did well if he had two crops in five years; if his trees gave him three crops in five he was perfectly satisfied with the returns from an orchard, and was willing to give it up. As a timely contribution to this important subject, we here give an article on

Peach Culture Along the Alleghaney River,

by John Siggins, Esq., Warren Co., Pa., who says: "The opinion is very general that there is no use of trying to raise peaches in this section of the country. But I have concluded to try and find out why peaches will not do well here. In the first place, nearly all the peaches heretofore raised in this valley have been of the most inferior varieties of very late peaches, and the trees are left to take care of themselves. I have experimented with a great many varieties, and find that the early ones are the proper kinds to raise here. I had some last year that were ripe before July 15th, and others ripened in August and September, which were all very fine and sweet. If peaches ripen in October and November, as most of ours do, the weather is so cool that the fruit is poor and sour, and covered with dark blotches, and it is no wonder that people say that "they are not fit to eat."

From my experience in this place, I would advise the planting of some peach trees every year (for peach trees are short-lived) of the early kinds that ripen in July and August, and not later than September. Prune back the trees fully one half the year's growth for the first three or four years, and cut out all the surplus wood. In the spring spade in at least one wheelbarrow load of manure around each tree, which will keep the trees in a healthy condition. If this were done, I think that the old fogy saying, "it is of no use trying to raise peaches here," would be no more heard. Last winter was a very hard winter, but I only lost two trees, and I am inclined to think that it was more on account of the borers than of the weather.



A NEW RASPBERRY—"THE MARLBORO'."

[There are two items of advice here given that should be generally followed: the pruning back the trees, and the manuring. If left to itself, the tree will make a wide sprawling head. If the growth of each year be shortened one-half, more or less, the result will be a rounded, compact head, the branches of which will not break down when loaded with fruit. As to manuring, an annual crop of peaches is something very large; we would not expect the same quantity of tomatoes or other vegetables from unmanured ground, but a tree is, somehow, expected to give heavy returns without a corresponding amount of fertilizing. The hints given by our correspondent are worthy of consideration by all who have peach trees.]

Some New Raspberries.

People in general are very exacting with regard to fruits, and expect to find every good quality combined in one variety. It is possible that we may have in the "Bidwell," or some other of the new strawberries, a variety that shall be *the best* for both family use and for market, but with raspberries the case is different. The very qualities which make the raspberry esteemed for the table—large size, tenderness, and juciness, are those that unfit it for transportation to market. We may as well accept the fact that there are raspberries and raspberries. That those best suited for market are not the most desirable for home use, and *vice versa*. In a market berry we seek for hardiness of the plant, prolific bearing, and a fruit so firm that it will reach the market in good condition. The "Philadelphia" showed how poor a fruit, if hardy and prolific, could be sold. Of late years our fruit growers have been on the look-out for new varieties suited for marketing, rather than for those of the highest excellence for home use. Among the newer varieties that have been tested to any extent is the "Cuthbert," which gives promise of great excellence as a market fruit, and also promises well for home culture. But one who cultivates raspberries for table use only, cares nothing about the question of transportation; with him the point should be, "What is the very best raspberry?" The fact that the finest varieties are tender, and that the canes must be laid down and covered with a few inches of earth has greatly interfered with raspberry culture in this country. The operation of covering is so simple and easily performed, that it should no longer be the bugbear that it has been to our cultivators. A single plate of the finer, tender kinds, "Brinckle's Orange," for example, is worth a bushel of the fruit of such hardy sorts as the "Philadelphia," and the fact that a variety is tender should not stand in the way of its cultivation in private gardens. In some of the noted raspberry localities, the "Hudson River Antwerp" is covered in fields where it is cultivated for market, showing that the task is not a difficult one.

Just now more attention is being given to the raspberry than formerly; the success of the late Mr. Herstine, and of Mr. Felton, both of Philadelphia, in producing new varieties is well known to fruit growers. Two new varieties of promise have recently been brought to our notice, one of which,

"The Marlboro',"

comes from Messrs. A. J. Caywood & Son, Marlboro', N. Y. This town, in Ulster Co. (given as Marlborough in the Post Office Directory), is well known as one of the great sources of the supply of small fruits to New York City, and is especially noted for being the headquarters of raspberry culture, especially of the "Hudson River Antwerp." The Messrs. Caywood & Son, it should be said, send us their new raspberry as the "Marlboro' Seedling." But as every raspberry is a seedling, we drop that word as superfluous. The Messrs. C. send an account of their new berry, from which we learn that some 15 years ago they crossed a variety known as "The Globe," with the "Hudson River Antwerp." A seedling from this cross, having many good qualities, was again crossed with "Highland Hardy," and the result of this was "The Marlboro'." Messrs. Caywood say that the plant is perfectly hardy, the canes having

been unprotected, but tied to the stakes for the past three winters, and that this season fruit was produced from the terminal buds. The engraving shows the end of a branch, with fruit of the average size. There is no fruit so unsatisfactory to represent in an engraving as the raspberry. Color and firmness, qualities that cannot be given in an engraving, go far in making an estimate of its quality; besides, only a few berries can be shown, while to judge properly of a variety one should see the whole plant. The berry is of large size, specimens measuring an inch in length and three-fourths of an inch across. The fruit, which leaves the receptacle freely, is of a light red color, is firm, and carries

A SUPPOSED NEW LARGE RASPBERRY—"THE PATRICIAN."

well. The foliage is very vigorous, and the wood is described as thornless. Specimens of the fruit sent to us on two occasions warrant all that Messrs. C. say of this new raspberry. Mr. E. P. Roe, who has seen the plants on Messrs. Caywood's grounds, says: "It impressed me very favorably, and I thought it well worthy of further trial."

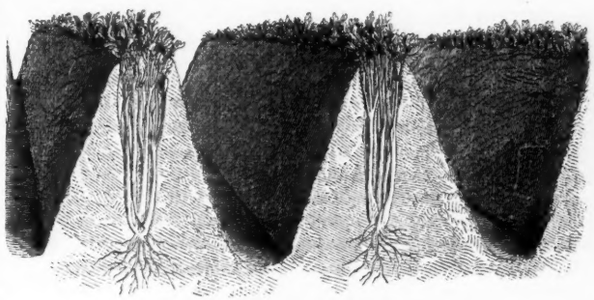
In a recent visit to the place of Mr. E. P. Roe, at Cornwall-on-the-Hudson, we saw bushes bearing a profusion of the largest raspberries we had ever seen, and as good as they were large. Mr. Roe calls this raspberry

"The Patrician,"

and we give a brief account of it, as it shows one way in which fruit histories become confused. Two plants were found growing in the grounds purchased by Mr. Bridgeman of Charles Downing, and were given by Mr. Bridgeman to Mr. Roe. Mr. Downing can not now say where he obtained the original plants, having lost all track of them, but thinks that he may have imported them. The whole stock has been transferred to Mr. Roe's grounds, where the plants were something wonderful in the abundance of their fruit of the largest size and finest quality. The variety is evidently of foreign origin, and may in future be identified with some well known European variety, but that it may have a name, it is to be known as "The Patrician," until some other can show a better claim. We agree with Mr. Roe, when he says: "It is the largest berry I have ever seen." Our engraving shows its unusual size. Mr. Roe thinks that in "The Patrician" we have the best variety for the amateur in the Northern States, but in the exercise of proper caution, he does not propose to send it out until after giving it further trial.

Celery—Preparation for Storing.

In writing of the treatment of a plant cultivated in such a wide range of climate as is celery, we are obliged to give directions well in advance of the time at which the majority will carry them out in practice. Last month we described the process of "handling." The plants had heretofore been allowed to grow at will, the leaves spreading in the natural manner. The object of the "handling," as already explained, is to bring the leaves and leaf-stalks into the proper shape; the spreading plants are brought to an upright position, and held there by drawing a small quantity of earth to them, and pressing it firmly against the base of each plant. Thus "handled," or brought upright, the celery will continue to grow. The operation is done at any time from the middle of August to the middle of September. At this season we have the most favorable conditions for the growth of celery. The days are warm and the nights cool and dewy, and it makes fine progress. As a general thing, there is nothing to be done to the celery during the present month, unless heavy rains should wash away the earth, and make it necessary to go over the plants, and mend any defects thus caused. Moderate or light frosts do not injure celery, but whenever sharp or killing frosts are expected, all should be ready for storing the celery. It should, however, be left out as long as may be done with safety. Market gardeners bank up celery in the rows where it grew or place it in trenches. Storing for family use can be done in trenches in the open ground, but the better way usually is, if there is a cool cellar, to store at least a part of the crop in boxes in the cellar. After the celery has been brought to an upright position by "handling," and sufficient earth has been packed against it to hold it thus, it continues to grow, and the stalks are still green and unfit for use. To prepare it for the table, the plant, or at least the stalks, must be "blanched," and this is done by the entire exclusion of light. If a portion of the crop is wanted for early use, a row or a portion of a row may be "banked up" next month. This operation consists in banking up the plants with earth on each side of the row nearly or quite to the tops. The plants will then appear as in the engraving, which, like that given last month, is from Mr. Henderson's admirable "Gardening for Profit." Celery thus treated will be blanched and ready for use in three or four weeks after banking up, and market gardeners usually treat a large part of their crop in this manner for early sales. If the celery is to be marketed at intervals during the late fall and early winter, it is stored in trenches. Trenches or ditches a foot wide, and deep enough to receive the plants, are dug in a dry place, and the plants, of course, those that have been "handled," are set in the trenches as closely as they can stand, but with no earth save that which adheres to the roots. The time of doing this will depend upon the locality, but near New York the celery is thus stored by the middle of November. When placed in the trenches, the exposed tops must be protected from severe freezing by a covering of straw, leaves, or other litter, and this covering must be increased as the weather grows more severe. We have kept celery for family use in this manner, having an abundance of covering material, and laying boards over this to facilitate getting at the celery in case of snows. Still if one has a cool cellar, it is much better to store the crop, or a good share of it, in boxes in the cellar. It should be kept in mind that celery is in greater danger from a too high than a too low temperature. If there is a furnace in the cellar, it is unsuited for storing the crop, and it should be placed in trenches in the open ground. In a cellar where the temperature can be kept just above the freezing point, celery may be kept with safety, and be always at hand. The boxes may be of rough boards, about nine inches wide, with sides as high, or nearly as high as the plants. A few inches of sand or earth are placed in the bottom, and the celery as taken from the ground is stacked closely in the boxes. Where there are several boxes, they should be set so far apart that there will be a free circulation of air among the leaves, otherwise heating and decay may take place.



THE CELERY PLANTS BANKED UP.

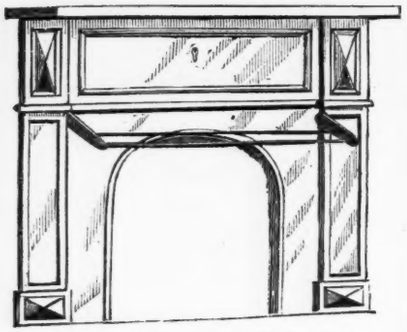
Where the cellar will not allow of this method of storage, a family supply may be kept at hand in the following manner: Sink a bottomless flour barrel for three-fourths its depth in the ground, and at a place handy of access from the kitchen; pack in the celery closely, and fill the unoccupied space with leaves, cut straw, etc., and put on the cover.

THE HOUSEHOLD.

☞ *For other Household Items see "Basket" pages.*

Clothes Dryer for Fireplaces.

Fireplaces are still used in many houses, and a handy means of drying towels, etc., before them, is a great convenience. Mr. P. C. Waring, Essex Co., Va., sends a sketch of a clothes-rack for the fireplace, from which the accompanying engraving is made. It consists of two light strips fastened by screws to the sides of the mantle, and bearing cross-



A CLOTHES DRYER FOR THE FIREPLACE.

bars to hold the articles to be dried. When not in use, the dryer can be quickly turned up and secured by a small wooden button, and is then entirely out of the way.

Home Topics.

BY FAITH ROCHESTER.

To School Again.

With September the school question comes to the front, for in this month most of our schools begin their active operation for the year. In what condition are our children, physically and mentally? How do we hope to find them at the close of the school year?

We cannot afford to leave this school business entirely to the teachers and the School Committee. Perhaps they would "educate" our children to death. What is the proper object of education? To *develop* the human faculties, and to put a person into *possession* of those powers with which Nature has endowed him, so that he can have them for use and enjoyment all through life. Not long ago it was generally believed that the object of education was the acquisition of knowledge, and I once heard a School Superintendent tell the children, that their minds were like baskets, which they were to fill as full as possible with facts while they were young. Ideas of this kind are passing away, and we no longer hear the memory lauded as the most important faculty of the human mind. We are more inclined to heed and assert the oft-repeated advice of King Solomon: "Get understanding," and "Get wisdom." How trifling, comparatively, is any amount of mere knowledge or information about things, if in gaining it the faculty for study and investigation, and right thinking, is used up or broken down? This not unfrequently occurs. The bright scholar, who is the pride of his teacher and the hope of his parents, breaks down in the race, used up before the real battle has begun. I have known this to befall children of naturally strong constitution, and the danger seems so wide-spread, and the calamity so great, that parents need to be thoroughly warned.

The Duty of Parents.

In the first place, the children should be sent to school in good physical condition. If they are sick they should not go at all. They must have full hours of healthy sleep, "early to bed" habitually, and not very "early to rise," if they seem to need more sleep. I feel as though I am committing a sin when I awake a child in the morning from sound slumber, even when I have been begged by the child to do so. It seems necessary to do this sometimes, in order to break a child of night wakefulness and late morning sleep. But sleep is literally "tired nature's sweet *restorer*." Brain repair and healthy physical growth take place best during the hours of sleep. The brain uses up by its work certain portions of the nutriment which comes from our daily food, and these must be supplied in our food from day to day, or the brain will work feebly or break down easily. I believe that many dull scholars are made so by poor food, much *poor* food being misnamed "rich."

I feel condemned when my children have to hurry to school, worried by a fear of being late. The home arrangements ought to be such that the children can easily be ready in season, and walk calmly to school, with no anxiety about tardiness. The teachers do well to try to promote punctuality, both for the good order of the school, and for each child's education in a good habit. But when children get such a dread of being late that they much prefer to be absent, the matter is overdone. More than once when my little daughter found herself starting so late that she wished to run most of the way to school (more than a mile), I have told her not to do so, that the tardy mark on the monthly report, and the staying a little while after school hours where not half so bad as a headache for the day, and the necessity for studying while over-heated and tired. This is a part of her *physical* education and a very important one.

If some children need urging to their studies, others need holding back quite as much. This little girl, finding herself 100 in most of her studies at the early spring examination, announced her intention of being 100 in all at the close of the year. Not long after she asked me seriously, "Which would you rather have me do?—study at noon-time and so be 100 in all my studies, or go out and play and not be above 95." Of course I did not hesitate in my reply. I said: "Play by all means, even though you barely pass (the lowest average for passing from one grade to another being fixed at 75), and if you study at noon recess instead of playing, I should want to punish you, as *nature surely would*, by making both mind and body suffer for mental over-work." So the little girl and her companions played ball and "Run, sheep, run," and examination found her fresh and calm, and apparently not at all worried until she was more than half through the exercises, which occupied the forenoons of one week. Then she received a letter from a very dear friend who had just passed her examination in another place. The writer said (not at all in a boastful spirit), "I was 100 in every study, which is no uncommon thing for me." Then our little girl was roused to emulation, as I could plainly see, and she was full of anxiety about the remaining examination, wishing to study both early and late which I discouraged. When she came home and announced her high average, she thought I was not properly glad. I told her I had been glad all of the time to see her finely and in excellent health and spirits, but within a few days I had begun to fear that she might gain a triumph at too great a cost. Her high average did not please me so much as the sincere regret she seemed to feel that she was marked higher in reading than a little friend who really is a better reader than she is—for this too, is an important part in her education. I tell all this by way of illustration, I might also tell of the efforts I have to make to induce another child to pay decent attention to study, so full of play is the child's mind. I am not at all sure that the latter mentioned will not some day outstrip all the others, even in mental achievment, but it does not now seem probable. Every one knows that precocious children seldom do the best in later life, and I never envy the parents of unusually "forward scholars."

Too Young Graduates.

A friend writes me that the Principal of their High School wishes to have her daughter, aged fourteen, graduate from the High School next year, doing the work of two years in one, in order to accomplish this. The mother will not allow it, for she has some time ago put a stop to all study out of school, having seen some signs of failure in the health of her child. She wishes her girl to take the school easily, and she says besides, very truly I think, "M—. is too young to take the later studies of the High School course to the best advantage." This is something I have often thought of. I see little girls of ten and twelve years working over examples in arithmetic that can have little practical meaning for them, or committing to memory scientific facts in which a child can have not a particle of interest. The teachers of some of our best Seminaries and Colleges protest against the youth of many of the pupils sent to them, and often advise a year's absence before graduating, for the sake of greater maturity of mind, in those who take the higher branches. But ambitious teachers push the brighter ones forward through the lower grades as fast as possible, and parents seldom see the danger and the folly of this unhealthy zeal. Children should learn as early as possible, that only a small part of their education can be carried on in the school-room, and that if this interferes with health or moral qualities, it is miseducation. More watchfulness on the part of parents about night study and wholesome food would make a change in the statistics concerning the growing evil of myopia, or near-sightedness, among school-children.

Home-made Stocking Suspenders.

I went shopping, the other day, with a long list and a lean purse. On the list was "2 pairs of stocking suspenders," but it soon became evident that the list would have to be cut down. So, instead of the patent stocking suspenders, which cost more than I supposed, I bought a yard of good elastic for ten cents. I cut this in four pieces, and bound each end. Before binding one end of each piece I sewed a loop of strong doubled and twisted twine, stoutly to the elastic, and drew the loop through a hole punched by the scissor's point through the tape binding. This made a well finished top-end of the suspender, with a loop to fasten to a button on the waist. The other end of the elastic strap

slipped through a buckle which was sewed in the folded middle of a narrow doubled drilling strap, about ten inches long. On each end of this strap was strongly sewed a button. This, of course, was a home-made imitation of the patent stocking suspenders, and much better than those which fasten only on one side of the stocking. The strap, which buttons at each end to the stocking, one on the inside, and one on the outside of the leg, is folded in the middle at a rather acute angle, so as to spread naturally to each side of the leg at the top of the stocking. This buckle is for the purpose of lengthening or shortening the suspender, as the length of the stockings makes necessary. Two loops of strong cord are sewed to the top of each stocking. After considerable practice and experimenting, these suspenders and their fastenings seem to me the easiest, cheapest, and most economical arrangement that I know of for fastening up children's stockings. As I used old vest buckles, the present cost was five cents a pair.

Household Notes and Queries.

THE PICKLE QUESTION comes up every autumn as regularly as the season comes around. The purport of a large number of letters is: "How can we put up pickles to look like those in the stores?" We have stated a number of times, and our letters of inquiry make it necessary to state again, that the fine appearance of the pickles sold in glass jars is due to two things. First, the "greening" of the pickles, and second, to the use of colorless vinegar. If people will buy very green pickles, they do so at the risk of copper poisoning. The bright green is produced by the use of copper in some form. The salted cucumbers are freshened by soaking them out in blood-warm water in a copper kettle; but the more common method is, to freshen the cucumbers by soaking them in luke-warm water, which is changed every 24 hours. Then to harden them, they are soaked in alum water, an ounce of alum to every five gallons, and to green them, an eighth of an ounce of verdigris is added to each five gallons of the alum water. Mind, we do not advise the use of verdigris in pickles. We prefer to take our verdigris without any pickles, but we give the method as stated in the works upon the subject. So far as we are aware, there is no method of having very bright green pickles without the use of copper in the form of verdigris, or by using copper vessels.

COLORLESS VINEGAR, the second condition upon which the fine appearance of the "store pickles" depends, has nothing unwholesome about it. This vinegar, though sold as "white wine vinegar," is really made from whiskey. It is not possible to produce vinegar except from alcohol in some form; it is the alcohol in cider, wine, beer, etc., that is converted into vinegar, and weak whiskey and water will, under the proper conditions, form vinegar. Such vinegar, while without the pleasant fragrance of that made from cider, is just as wholesome as any other, and is the kind used by the manufacturers for the pickles put up for sale.

FOR HOME PICKLES, why care if they are green or not? It is the taste, and not the eye, that is to be gratified, and so long as the green color can only be had at the risk of poisoning by copper, let it be understood that all intensely bright green pickles are suspicious, and are to be avoided as unwholesome.

STUFFED PICKLES may be made either from unripe melons or from the very large peppers that are grown for the purpose. Melons thus pickled are called Mangoes, and in every melon patch there will be a number that will not ripen before frost, that may be used for the purpose. Those of the size of a large orange are best; cut out a piece from the stem end, large enough to admit a spoon to remove the contents; when this has been done, put the plug back in place, and secure it by a wooden pin. The melons thus prepared should be placed in a stone or wooden vessel and covered with brine, in which they are to remain for 24 hours. The stuffing is to be made ready according to the materials at hand; green tomatoes, cucumbers, cabbage, green peppers, onions, and the like, are to be chopped small; shredded horseradish, mustard-seed, and any desired spice may be added. Take the melons from the brine, rinse them well, and fill them with the stuffing, securing the plug to each by means of wooden pins, or by sewing with coarse thread. Place the stuffed melons in a jar, and pour scalding vinegar over them. Pour off the vinegar the next day, scald and return, and do this for three or four successive days. Peppers can be treated in a similar manner, but with these it is better to make an opening in the side. The stuffing in either case may be varied according to fancy.

Fungi for Wall Brackets.

The various kinds of hard "shelf" fungi, or "bracket toadstools," as they are sometimes called, are attractive in themselves, and suggest by their shape the use as wall brackets, for which they are frequently employed. Figure 1 shows a group of one of the more common of the fungi, as it is found upon the trunk of a tree. These fungi grow with the smooth surface upward, frequently being bright-colored, and sometimes covered with a natural varnish, An attractive form of one of the fungus wall-brackets is shown in fig. 2, taken from Mr. Batty's new work, "Practical Taxidermy and Home Decoration." The

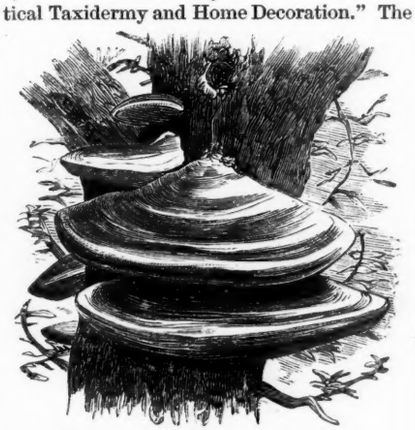


Fig. 1.—A GROUP OF BRACKET FUNGI.

fungus has been inverted, thus bringing the level under surface to the top, and a thin board, cut to an attractive form, is glued upon the back, by means of which the bracket can be hung to the wall, either by means of a nail through a hole in the back, or suspended from above by a cord. The adornment of this shelf allows of the display of considerable taste. The one shown in the engraving is devoted to wild ferns, the fine forms of which may be arranged with a very pleasing effect. Fine grasses, and hard, bright-colored, and durable berries may be added.

Fig. 2.—A FUNGUS WALL-BRACKET.

The great tendency in all adornment is to overdo, crowding together a mass of good things, thus injuring the effect of the whole.

Summer Complaints.

Our readers are well aware that we do not advocate promiscuous dosing. Still every family, especially those living in the country, has its domestic remedies, and every mother is, or should be, able to treat those troubles that occur in her household, that are not sufficiently grave to warrant the calling of the family doctor. At this season, one of the most common troubles is diarrhœa, or looseness of the bowels. It is not only very common, but with children is often concealed from the parents, and thus becomes established. Complaints of this kind usually yield to some mild form of astringent. For such troubles there is everywhere at hand a most excellent remedy in the form of the root of the common Blackberry, whether of the upright or the creeping form, it makes no difference. The roots of one or the other kind are to be had everywhere in the country, and a decoction or tea made from them, is regarded by our best medical men as a most useful remedy in nearly all forms of what is popularly known as Summer Complaint. As the plants are everywhere, the remedy is always to be had. A decoction made by boiling an ounce, more or less, in a pint and a half of water down to a pint, is the usual method of administration. Of the tea thus prepared, a wine-glassful is the usual dose for a grown person, and a teaspoonful for a small child. The testimony from all parts of the country is in favor of the efficacy of this remedy for old and young, and in recent and prolonged cases. In the obstinate army diarrhœa, which gave so much trouble in our camps, this was found to be a most useful remedy. As its effect is that of a pure astringent, it may be taken without reference to any exact amount, and, if desired, may be rendered more palatable by the use of aromatics. It will be well, when the growing season is over, and before the ground is closed by frost, to dig a supply of the roots to be kept on hand for use in an emergency.

BOYS & GIRLS' COLUMNS

The Doctor's Talks.

There are so many things that I would like to talk to you about, that I never feel at loss for subjects to write upon, but I am often in doubt as to which will most interest my young friends at a particular time. I am always glad when you let me know what you would like to have me talk about. Hence, when "H. D. B.," of Passaic Co., N. J., wrote: "Can you not tell us something of

The Methods in which Seeds are Distributed,"

I was pleased to get his note, for it showed what at least one boy was thinking about, and I have no doubt that it will interest other boys and girls as well.

We consume a great many fruits, thinking, no doubt, that they were created especially for our gratification, while the fact is that many fruits we esteem so highly are formed especially to make sure that the seeds they contain will be properly distributed, or, it may be, safely preserved. But before we talk any further we must first understand

Fig. 1.—THE "SAND-BOX."

What We Mean by "Fruit."

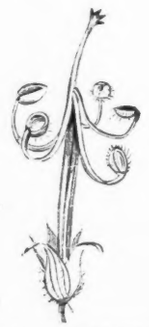
You will, no doubt, be very ready with an answer, and say that a strawberry is a fruit and so is an apple, but if told that a bean-pod or a poppy-head, was a fruit, you might be disposed to doubt it. Flowers you know take on a wonderful variety of forms. There is, as a general thing, a showy part, the corolla, and within this some bodies called stamens, and in the center of the flower a pistil or pistils. The pistil contains minute bodies, called ovules, which in time will become seeds. Strictly speaking, a fruit is the ripened pistil, containing the seeds, and whatever may be attached to it.

The common notion of a fruit, that it is something juicy and eatable, will not hold under this definition, for a chestnut is as much a fruit as a peach. In talking about the methods for the scattering of seeds, we must begin with the fruit. The

Fig. 2.—THE "CRANESBILL" FLOWERS.

chief object of the fruit is first to perfect, and afterwards to distribute the seeds. One of the most beautiful fruits or seed-pods that I know of, is called the "Sand-Box." It grows upon a tree of moderate size in Central America, and when ripe is about the size of an average orange, but much flattened. It is woody, with a polished surface, and is regularly grooved, as shown much reduced in size, in figure 1; it looks more like a work produced by a wood-carver than like a seed-vessel of natural growth. Not only is this a most beautiful object, but it illustrates one of the methods in which seeds are distributed. Several years ago, a friend sent me a box filled with these Sand-boxes; at that time I had a class in botany, and I gave one of the capsules to each of the dozen or more young men of the class. I told them that the fruit was a

3.—POD OF CRANESBILL.



4.—THE POD BURSTED.

most interesting one, and that I would tell them about it at another time. A few days after one of the young men of the class came to me with his face showing the greatest astonishment. "I was sitting in my room," said he, "and there was a great bang, a rattling and scattering of pieces. The beautiful Sand-box had burst, and the fragments were all over the room."...."You have now learned," said I, "from the capsule itself, what I might have told you, that it is a wonderful device for the scattering of seeds." Each groove in the fruit represents a cell that contains a large seed. The sides of these cells are of a very hard wood, with the fibres so arranged that in drying they cause the parts to fly apart with a sudden report, and the seeds they contain are thrown to the distance of many yards. The method of the "Sand-box" in distributing its seeds, being on a large scale, and accompanied by a loud report, is very noticeable, but it is really no more wonderful or interesting than the many ways in which

Our Common Plants Scatter Seeds

about us every day. In this, as in other things, we look after the far-fetched and noisy, and overlook the common and quiet. There is, all over the country, a very common plant that has an arrangement for scattering its seeds which is quite as wonderful as that of the Central America Sand-box, but it is very small, and does not make any noise. There is found in every State east of the Mississippi River, a plant commonly known as "Cranesbill," or "Spotted Cranesbill." The botanists' name for it is *Geranium maculatum*, and it is closely related to those plants cultivated in the garden as Geraniums. You can find this plant growing almost everywhere, in the edges of the woods, in the fields, etc. The stems are about two feet high, and bear pale-purplish flowers. That you may the better recognize the plant, I give you, in figure 2, two flowers of the real size, and also a very young seed-pod. I also give in figure 3, a full grown seed-pod, or fruit, as you should learn to call it. When you find a plant with ripening fruit like this, you must watch it. You can cut off the upper part of the stem, with several such fruits, take it home, and place it in water, when it will ripen as well as if left on the plant. When the seed-pod is ripe, you will find

Something very Curious will Take Place.

That which appeared like a single pod will break up and show that it is made of five little cups, with a seed in each, and each cup is hung upon a spring, so that when it is quite ripe the cup will let go its hold, and the spring will curl suddenly with such a flirt as to throw the little seed that it held to quite a distance. Fig. 4 shows the pod thus splitting up, and throwing its seeds about. Another very common plant, found everywhere in shady places, and especially along water-courses or ponds, is the

"Wild Touch-Me-Not," or "Jewel Weed."

It may have other names in different parts of the country, and that you may know it, I give in figure 5, an engraving of the peculiar flower, a leaf, and a full-grown pod. I do not know of any other plant that has such pale-green leaves, tender stems, and yellow or orange-colored flowers of just this shape. There are two kinds, one with much darker-colored flowers than the other, but they both have similar pods, and it is these that I wish you to especially notice. One of these pods is shown in figure 5; if left alone it will in time burst and scatter its seeds, but you can make it do this if, when you find a ripe pod, you give it the least possible squeeze between the thumb and finger. A very slight pressure will cause the five parts of the pod to break away from the central portion, and as each comes apart it will forcibly twist and send out the seeds with a sudden jerk. The pod, after this bursting, will appear much as in figure 6, though no two will look alike; in some cases the parts of the pod will be thrown off, and all will be a thorough wreck of what was before a very regular pod. These two examples, though so small, and constantly happening all around us, are quite as interesting as the more showy "Sand-box" of Central America. We cultivate in gardens plants closely related to the Jewel-weed, now generally called Balsams, but when I was a youngster, they were always called "Touch-me-nots." Those at present mostly cultivated have very double flowers, and do not bear seed-pods very freely, while the old-fashioned single kind bear a greater abundance of much larger ones. It used to be great fun to pick these pods, which may be done with careful handling, and then, by pressing them slightly, make them burst, and throw the seeds

Fig. 5.—THE "TOUCH-ME-NOT" FLOWER AND POD.

about. This method of scattering seeds, the sudden breaking up of the pod that contains them, is only one of the many methods provided for their distribution. Besides being a very interesting fact, it has a practical application. If you have in your garden the well-known Drummond's Phlox, or any Violets or Pansies, of which you wish to save the seeds, you will find it necessary to gather the seed-pods when they are full-grown, and just about ripening, and place them under a sieve or in a paper box. If you do this, the pods will burst open and scatter their seeds where these can be saved. If the pods are left upon the plants in the garden, they will burst and the scattered seeds will be lost. The list of plants having some such means of scattering their seeds as above described, is a long one, and I have only mentioned a few of the more common ones, that every child may watch for himself. It has always been my intention in these "Talks" to make my young readers more observing—more wide-awake to see the interesting things in nature that are all around us.

6. "TOUCH-ME-NOT" POD BURSTED.

Our Puzzle Box.

HISTORICAL ACROSTIC.

The initials form an oft-quoted line of one of Cowper's poems.

1. Patriarch of Constantinople in 847; died in 878.
2. One of the greatest Roman Orators; slain B. C. 67.
3. One of the twelve minor Prophets.
4. A popular preacher in London; born 1629, died 1677.
5. An eminent English artist, born 1761, died 1807.
6. One of the first American Missionaries.
7. A celebrated Milanese painter, born in 1750, died 1818.
8. One of the most violent of the French revolutionists: put to death July 28, 1794.
9. A Scottish gentleman of whose wonderful prowess most remarkable tales are told: was said to have been murdered at the age of 23 by the Duke of Mantua's son, in 1583.
10. The founder of a new school of medicine. Born in Saxony, in 1755.
11. A French reformer: the first who translated the Scriptures into French immediately from the Hebrew and Greek. Died 1539.
12. Son of an English inn-keeper, and a martyr to the Protestant religion in the reign of Henry VIII.
13. A musical composer, died 1629.
14. A celebrated Spartan legislator.
15. An ancient Athenian orator.
16. A Greek orator, who died A. D. 450.
17. An English divine and antiquary.
18. An Italian painter, died 1564.
19. A martyr for his religion in 1555.
20. A French farce and song writer; died 1757.
21. A member of the English Parliament and lawyer who defended Thomas Paine in 1792.
22. An English poet and chaplain, born 1679, died aged 83.

MRS. MAYO.

NUMERICAL ENIGMAS.

1. I am composed of 46 letters:

My 10, 43, 2, 18, 30, 5, is to draw out.
My 29, 20, 1, 13, 8, 5,—the horns of a deer.
My 24, 44, 27, 12, 3, 22, is part of a printing press.
My 16, 26, 30, 17, is to rob.
My 45, 14, 35, 11, 23, 9, 40, is a compact.
My 28, 46, 39, 32, 36, 4, 41, is to corroborate.
My 21, 34, 38, 31, 19, is a small weight.
My 25, 33, 7, is a foreign coin.
My 6, 37, 15, 42, is sound.
My whole is a plant, and where produced.

C. B. RIGGS.

2. I am composed of 17 letters:

My 7, 13, 9, 6, is in the air.
My 7, 15, 3, 17, is a planet.
My 7, 8, 5, 6, is part of a sailing vessel.
My 1, 15, 9, 10, is useful to all of us.
My 2, 11, 12, 4, 14, 8, 16, an anniversary celebration.
My whole is a welcome season to the children.

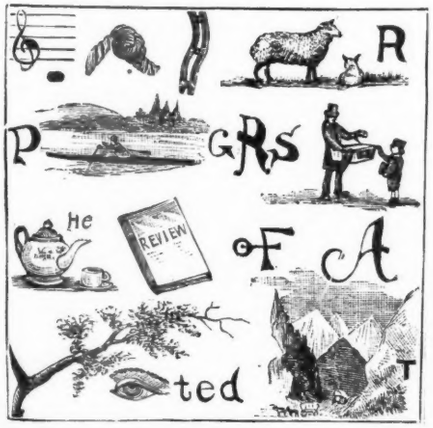
HERBERT L. L.

CROSS WORD.

My first is in shuffle but not in jog,
My next is in timber but not in log,
My third is in clatter but not in noise,
My fourth is in children but not in boys,
My fifth is in finger but not in thumb,
My sixth is in fiddle but not in drum,
My seventh is in rabbit but not in hare,
My eighth is in apple but not in pear,
My ninth is in fare but not in toll,
You easily can break my whole. J. Q.

PI.

Ocanreign dan dupmenice ear pearinbales onion-camps.



Illustrated Rebus No. 487.—A good piece of advice, especially to the young readers.

ALPHABETICAL ARITHMETIC.

(We are sometimes asked how these puzzles are "worked out." The letters stand in the place of figures. When you see the same letter one above the other, it is pretty safe to suppose that the letter underneath the two stands for 0. That will give you a clue, or a start: then if you see the same letters in the dividend as you find in the divisor, you may infer that "it goes once," and the letter in the quotient belonging to that dividend must stand for the figure one. Many arithmeticians tell us that they enjoy these puzzles better than any others. Those not so clever at figures prefer to study the puzzle as an anagram, and find out the sentence or word embodied in the letters: so far as that is concerned I merely say [like the man in the show] "You pays your money and you takes your choice.")

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ALWT)OIEDRNIW(RDAWA
      ETOR
      ----
      RRONR
      RTEAD
      -----
       TRTNN
       WRDA
       ----
       ROORI
       RDOTW
       -----
         TLLNW
         WRDA
         ----
          DOE
```

DIAMOND.

1. In barn. 2. A mighty weapon. 3. An article of food. 4. To perplex. 5. A kind of nut. 6. A rural poem. 7. Antecedent. 8. A number. 9. In house. The central letters, horizontal, name a fruit.

ELLIE.

ANAGRAMS.

1. I scare Nat.
2. Lug it in Sam.
3. Mice pens.
4. Cider seen.
5. Abbe's lover.
6. Her lamb pie is —
7. Lane music.
8. O! I curse merit.
9. Or I sell ice.
10. Made more sin.

Answers to Puzzles in the July Number.

DECAPITATIONS.—1. Store, tore. 2. Stare, tare. 3. Stump, tump. 4. Broach, roach. 5. Spit, pit. 6. Trip, rip.

BIBLICAL WORDS SQUARE.—
M A O N
A C R E
O R E B
N E B O

DEFINITIONS.—1. Nebula. 2. Symbol. 3. Lessar. 4. Mate. 5. Volatile. 6. Waste. 7. Ant. 8. Among.

NUMERICAL ENIGMA.—A new broom sweeps clean.

FOUNDATION WORD.—1. More maidens. 2. So—men—admire. 3. Dream—in some. 4. Son—dime—mare. 5. More man—side. 6. Mine or—dames. 7. Me mad—I snore.

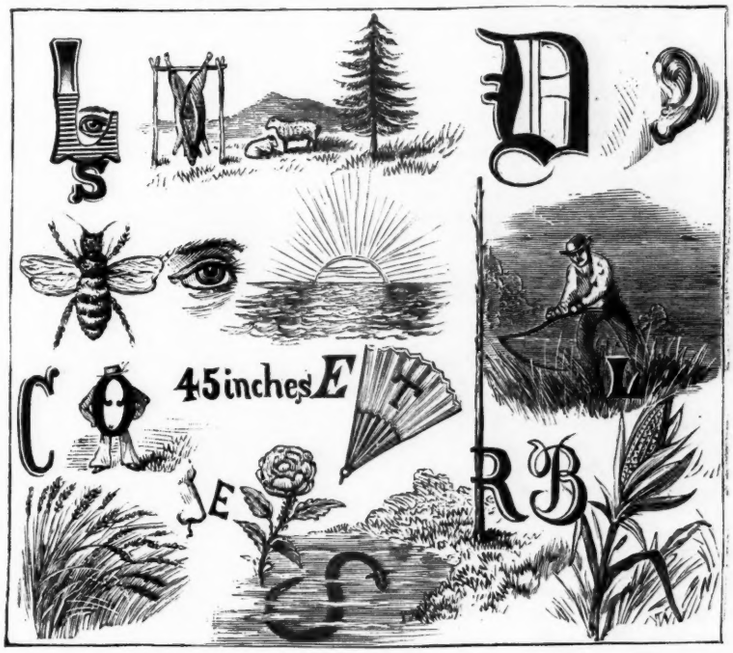
ENIGMATICAL STORY.—The Fourth of July.

PREFIX PUZZLE.—Prefix the letters AD and make—address, advice, admit, advent, ado, administer, adduce, adverb, and adverse.

FRUIT PUZZLE.—Raspberry, currant, plum, date, peach, orange, shaddock, cantelope, mango, and apricot.

Wild Animals of Land and Sea.

The accompanying rebus takes the shape of a menagerie, at least it may be so considered by the reader, and the point is to "go through the exhibition" and find all of the animals. The first one that your attention may be called to after entering the imaginary doors is noted for its swiftness on foot, and the excellent quality of its flesh when prepared for food. It has a slender body, a short tail, and long, slender limbs. A strange creature is that in No. 2, with its short legs and strongly protected body. Though not a bird, it has something that would remind one of the feathered tribes. It is of no special value, being more curious than useful to man. No. 3 is very seldom put in a cage on account of its size. Its ears are no small part of this animal and at first sight one would think they were situated near its tail. It might be called the baggage master of the menagerie. No. 4 is of a small size, but not at all companionable. No one in his right mind would choose this beast as a bedfellow. Be sure and look at its nose, and also observe the smallness of the eyes of the thick-skinned and hairless fellow. The visitors are requested to keep away from the cage in which No. 5 has been placed. She has something of a reputation as a man eater, and goes about the cage shaking her tail against the bars in a savage manner. Some men are so daring as to go into her cage, but it is safest to enter when she is away. No. 6 is a small animal, and does not make much of a show in the collection. Upon close inspection its feet will be found to be curious in their structure, as if made to burrow in the ground. The keeper will doubtless inform those who ask him about this animal that it is blind, but its small black eyes can see to some extent. The fur coat is of the softest and finest kind. No. 7 is a white animal that is much more fond of living among icebergs than most other members of the menagerie. There is a black kind that was once quite common in the forests of the United States, but now has mostly disappeared. No. 8 is perhaps one of the rarest of the group, but will be easy to recognize, and once acquainted with it, it is a friend. No. 9 does not thrive in confinement, much preferring the prairies of the West, over which it roams in herds in the wild state. The skins, for which it is killed in vast numbers, are very valuable. So are those of No. 10, but this animal is a lover of the sea, and is found there in large numbers.



A STRANGE-LOOKING MENAGERIE, WHICH ALL ARE INVITED TO VISIT.

THE CHILDREN AT THE CIDER-MILL.—*Designed and Engraved for the American Agriculturist.*

Cider and Cider Making.

My young readers might draw a conclusion from the "Trouble in the Orchard," given last month, that the apple is the source of a great deal of suffering—if not of the first sin, in the world. This fruit plays such an important part in our childhood, that I am induced to treat of it again, though in a somewhat different way. The apple is a juicy fruit, and when hard pressed yields an amber-colored liquid well known by the name of cider. It would be pleasing and perhaps not without profit for us to look into the origin of the word; and see that it was oriental in its birth, and came into use very early in the history of the human family. The French have their *cidre*, the Italians drink *cidro*, and the Spanish *sidra*. The Portuguese sit around their *cidra*, the Romans called it *sicera*, and the Grecian boys had the same fluid in the form of *oikepa*, and the Hebrew children rejoiced over a drink of *shakar*. Thus we see that our cider is no new thing, and yet it is "new cider" that most interests the boys and girls of the world. To many young readers it would be out of place for me to tell how cider is made. Every child so fortunate in its birth as to live where apples grow, and is old enough to read this, already has a pretty clear idea of the process through which apples must go in the making of cider. But a great many who will read this were not born in the country, and these know nothing of the pleasures of country children, indeed, have never seen a cider-mill. To such the engraving will be all new. Country children, on the other hand, have been to the cider-mill—perhaps upon a load of apples, and there watched the fruit as it was shovelled into the mill, and the pulp as it was placed in the press, and the stream as it flowed into the vat below. It was a sort of a holiday—one that was looked forward to with pleasure, and the thoughts of the day made the labor of gathering the apples seem light and even joyous. There is a double pleasure in cider-making for the children—it takes them away from home for a day—a sort of a visit, and at the same time it affords them the opportunity to get their "fill" of one of the most pleasant of drinks, fresh from the very fountain.—When I told "The Doctor"—and I need not explain to you who he is; he has been writing the interesting "Talks" and "Correspondence" for you so many years—when I told him that I thought of getting up a picture of a cider-making scene, he said: "You must be careful not to do anything that would lead any of our young readers to like cider too well. It is not cider, in its fresh state at least, that is objected to, but by encouraging them to drink cider they might be led to drink something worse." I believe that these are words of wisdom, and instead of saying to all, old and young, make and drink all the cider you can, I will remark here that cider has its place, and whenever it is used for purposes of intoxication, as it can be when it gets "old," it is not rightly employed. I would be the last one to put anything in the way of the advocates of temperance, and if the cider-mills, that are scattered all over our broad land, are making drunkards by making cider, that is, increasing the tendency to indulge in strong drink, I for one should vote that the match be applied, and that all be burned to the ground. As they now stand, they furnish a good share of the autumn pleasure of the farmer's family, and are a means of making a valuable, marketable product out of apples that it would not pay to ship to market. A very large part of the cider of the country goes into vinegar, and in so far as this is so there can be no objection. Take it altogether, I am inclined to think the cider-mill is not a curse, and that a little cider, when fresh, is good to drink.

The engraving herewith presented shows an interior view of one of the old-style cider-mills, in which the children are evidently having a good time. One lad is climbing to the top of the press, as if he would try and see how the machinery works that causes the pressure upon the ground apples and the flow of rich juice from the slanting board below. The larger girl is filling her cup with the fresh cider, and, it may be, takes delight in holding her dish to catch the amber stream as it falls. The most real fun may be in another corner, where two children are enjoying the sport of "sucking cider through a straw," and that from the bung of a well-filled barrel. This is sport that is familiar to many young readers, and carries older ones back to earlier days. UNCLE HAL.

We draw attention to advertisement on another page of T. W. Lawford, General Agent of the best known and cheapest Sheep Dip of the day.

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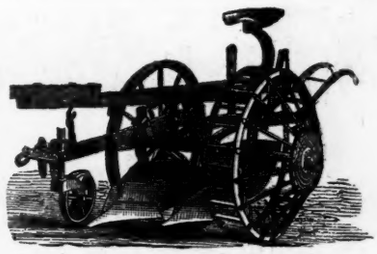

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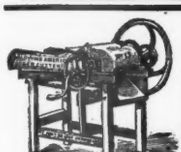

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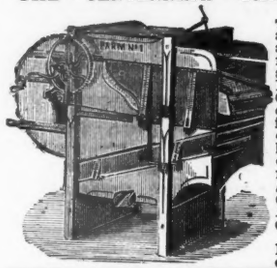

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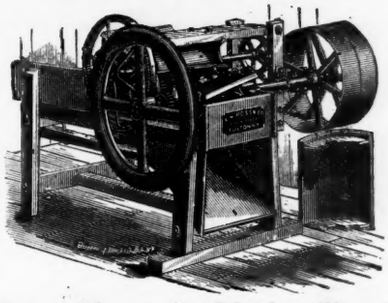

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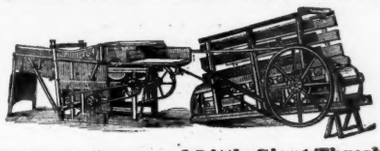

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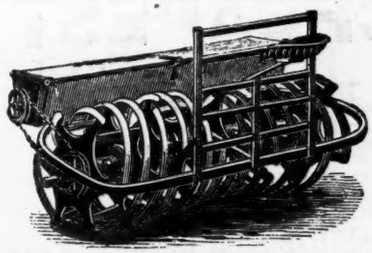

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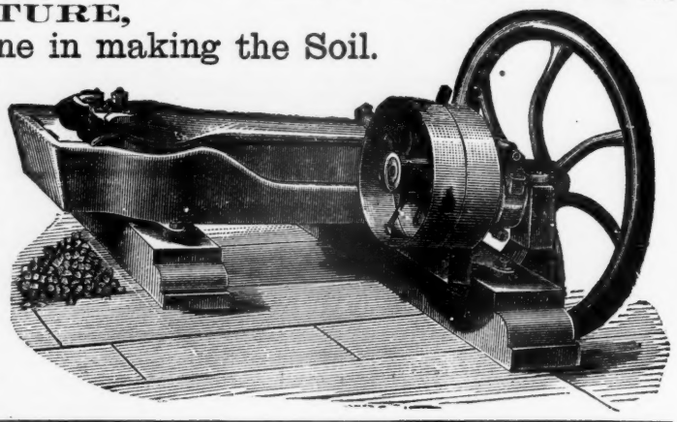

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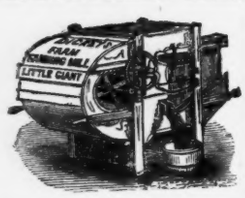

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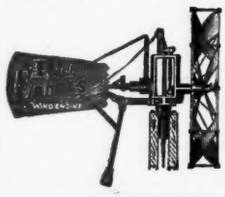

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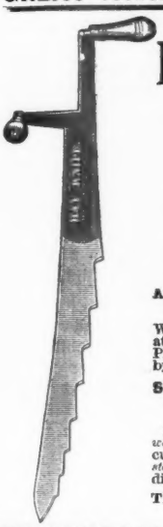

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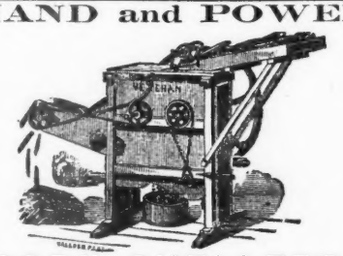

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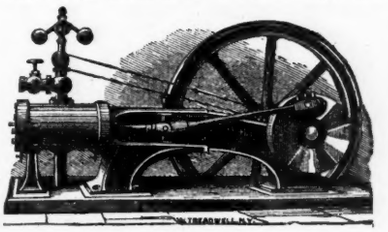

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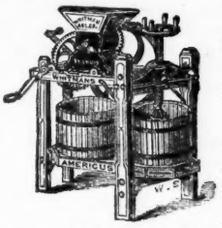

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Bound Copies of volume 39, and of every previous volume back to Vol. XVI. (1857), neatly bound, with gilt backs, Index, etc., are supplied at $2 each (or $2.30 if to be sent by mail). See Publishers' Notes, on last page.

Clubs can at any time be increased by remitting for each addition, the price paid by the original members; or a small club may be made a larger one at reduced rates, thus: One having sent 6 subscribers and $7, may afterwards send 4 names more and $3, making 10 subscribers for $10.00; and so for the various other club rates.

Terms to New South Wales, New Zealand, Australia, Africa, etc.—To several inquirers. Under the latest revision of the Postal Union Regulations the price of the *American Agriculturist* (either English or German edition), including postage *prepaid* through, will be covered by 7 shillings sterling per annum. This applies to the above countries, and to all others embraced in the General Postal Union. The simplest mode of remittance is by Postal Money Orders, payable in London, to the order of Orange Judd Company. These can be readily cashed in N. Y. City at a slight discount, which the publishers will cheerfully pay. For Club rates (postage included), see page 304, and reckon 22 cents to the shilling sterling.

Read the Advertising Columns.—Letters are daily received by the Editors, asking where pigs, fowls, seeds, fertilizers, machinery, etc., can be procured. We consider all the information of this kind that is given in the advertising pages sufficient, if those needing anything will only look there; we can not find room to repeat what is already plainly told elsewhere. Every page of the *American Agriculturist*, including the covers, is interesting reading, and should all be carefully examined every month. In addition to looking after what one may want, the reading of what others have to say, in offering their wares, etc., starts up some new idea in the mind of the reader.—When writing to any advertiser, always tell him in what paper his advertisement was seen.

The First Prize Horse Essay.—Correction.—The Judges to whom the Horse Essays were referred, awarded the first prize to the one signed "Slack." In taking the name of the writer from the original record, it was by an error given wrongly. The name of the author is C. F. Barber, Esq., Auburn, N. Y.

Grape Catsup.—Several have asked for a recipe to make this. The only recipe we have seen is one we received from a far western housekeeper, some twenty years ago. She prepared from the common wild grapes a sauce, which she called grape catsup, finding it so delicious with cold meats on the table, we afterwards asked for the recipe, which is as follows: Stem the grapes, place in a kettle or preserving pan, which, to prevent scorching, is set within another vessel of water. To each quart of grapes add a teaspoonful each of cinnamon and mace, both broken fine, and half a teaspoonful of bruised cloves. Cook for an hour, and pass the juice and pulp through a colander or sieve. To each quart of this add a pound of sugar, and boil until nearly a jelly. Then thin to a proper consistence to flow from the bottle, with vinegar; cork, seal, and put in a cool place.

Will Prices Go Up or Down?

A Talk About Grain and Produce Speculations—Crop Prospects—Artificial Prices, high and low—"Bulls" and "Bears"—The Time to Sell, etc.

"Shall we sell now, or hold on?"—"Do you think prices will advance or decline?"—These questions come to us more frequently and urgently than any and all others, at this season of the year—and the same has been the case for eight-and-twenty years past. If we had, or could get the knowledge that would enable us to answer this question with certainty, we could use that knowledge to make a million dollars in a single month. Years ago the *American Agriculturist* attempted to gather the desired statistics, and partially succeeded, but the work was so great and important, that it was turned over to the Agricultural Bureau at Washington, on the promise that it should be expanded into a national enterprise. It has ever since been carried on about as we planned and started it, but often with even less efficiency and accuracy. The Agricultural Bureau could, and *ought* to do the work so thoroughly that the public would be in possession of just the knowledge of the state of the crops, in this country and abroad, that would enable all to judge of the supply and demand which *sh uld* govern the range of prices. We have sometimes desired to run that Bureau for a year or two, just to show what could be done in this direction alone, if in nothing else.

How Gambling in Grain, etc., is Done.

During two or three years past, and never so greatly as now, the methods of the Stock Exchange have been introduced into the produce markets, and hundreds of men, in leading cities, notably in Chicago, Toledo, St. Louis, Baltimore, Cincinnati, and New York, are daily betting millions of dollars upon the probable prices of wheat, flour, corn, oats, lard, pork, bacon, etc. To illustrate: Mr. A. offers to deliver to Mr. B. a million bushels of No. 2 Red wheat at $1.22 per bushel, on the 31st day of August, though he (Mr. A.) does not own a single bushel of wheat, and does not expect to. Mr. B. takes the offer, and makes a deposit of a small portion of the price or "margin." in this case Mr. A. is said to be "short," and Mr. B. "long." Mr. A. is "short" of what he has agreed to deliver. If the closing sale of this grade of wheat on Aug. 31 is only $1.20, Mr. B. pays Mr. A. 2 cents a bushel, or $20,000. But if the price is $1.25, Mr. A. pays Mr. B. 3 cents a bushel, or $30,000. Usually no wheat is actually delivered. Sometimes, however, if there is a limited supply of wheat available, and Mr. B. has capital enough, he secretly buys up all there is; he gets up a "corner" in wheat; and when settling day comes, he may require Mr. A. to deliver the wheat, or he may get others to try to buy it, while he refuses to sell until $1.30, or $1.40, or even $1.50 is offered, and the price of the day is fixed at that rate. In the last named case, Mr. A. would have to pay him the difference between $1.22 and $1.50, which on a million bushels would be 28x1,000,000 or, $280.000. If, on the contrary, the price could be beat down on the settling day to $1.00 per bushel, Mr. B. would have to pay Mr. A. 22 cents a bushel, or $220,000. We have named only two individuals, but there are hundreds or thousands of persons doing the same thing, some betting on a few thousand bushels, others on hundreds of thousands, and a few heavy operators on millions. In times of excitement and activity the speculative "sales" of wheat during a few days amount to more than the entire surplus crop of the country during a year. The operators are in two classes, those like Mr. A. are "shorts," and those like Mr. B. are "longs." Precisely the same operations are taking place with reference to other grades of wheat, corn, oats, lard, pork, etc. The same man often operates in several kinds of produce, and may be "short" of one and "long" of another. One speculator will often be short for August delivery; long for September; and short or long for October, or for "the year."

"Bulling" and "Bearing" the Prices.

It will be seen from the above that Mr. A., and all other "shorts" are greatly interested in depressing prices, in knocking them down, so that they can buy cheaply, or settle on a low basis, and they are called "bears" from Mr. Bruin's way of knocking things down with his strong paws. On the contrary, Mr. B. and his class of "longs" want prices pushed up to the highest possible figures; they are called "bulls," from the animal that tosses his victims *upward* on his horns. These explanations will enable one to understand the terms and ways of the Stock Exchange, where railway and other stocks, bonds, governments, etc., occupy the place of grain, hog products, etc., in the corn or produce exchanges. (It is well worth while for any one to visit both the stock and corn exchange buildings during business hours, when in New York or Chicago. We have been in all of these, and in those in London, Paris, and Frankfort, and the methods, and the "Babel" are the same in all.)

How Prices are Manipulated.

As above stated, if left to their regular course, prices would be mainly governed by the relative supply and demand. But the two great classes of operators, having millions of dollars at stake, use every possible effort to affect the prices by artificial means. The "bears," or "shorts," in wheat or corn circulate exaggerated reports of great crops, immense supplies left over from last year, increased acreage, and abundant crops all over Europe. They control newspapers in their interest. They send an army of correspondents through the country to write up glowing reports of the crop prospects. Telegrams and cable-grams fly thick and fast, especially as a day for settling contracts approaches. Real and fictitious sales are made at low figures. On the contrary, the "longs," or "bulls," fill the country with reports of bad weather, chinch bug, rust, scarcity of old stocks, bad harvests in Europe, rumors of approaching war—in short, use every legitimate and illegitimate effort to raise prices to the highest figures until after the contracts are closed up. It may be added that parties speculating in the stocks and bonds of railways running through the grain regions, help the grain speculators in spreading the reports, favorable or unfavorable, according to whether they are interested as "bulls" or "bears," in advancing or depressing the prices of railway securities.

It will be seen from the above how important it is that the government—the Agricultural Bureau—should so organize and carry on the investigations and gathering of exact statistics, that the real producers, the farmers themselves, should have one source of accurate, trustworthy information.

What Shall Farmers Do Now?

In this confusion of reports, what shall farmers do? Shall they sell at present rates, or hold for a rise? We have watched the varying markets, carefully for weeks past. Reports apparently equally reliable—but in fact utterly unreliable—about balance each other. Some days the current runs one way, and then the opposite current seems to have the mastery. Reasoning from general principles and facts we should say,

On the "Bull Side,"

1st. That after three successive years of excellent crops here and poor ones throughout Europe, a change was to be looked for in the natural order of things.—2d. That the early setting in of the last winter prevented some fall sowing, and the preparation of much ground for spring seeding, and that the continuation of winter nearly a month later than usual could not but largely restrict the area sown.—3d. That the long, hard winter must have injured an unusual amount of winter grain.—4th. That the freshets in the wide river valleys destroyed many thousands of acres, while the heavy and frequent rains, the comparatively cold weather during the early summer and much of later spring, *must* have seriously injured crops on all lowlands and on higher ground not quickly drained. Also that this cold, wet weather surely prevented a good growth of stalk and lread, and actually ruined many fields. *The above facts cannot be set aside by any amount of garbled reports.* If all these unfavorable circumstances decreased the total yield only one acre, or one bushel, in six, from last year's crop, it would diminish the total wheat crop of the country eighty million bushels. We *guess* the depreciation, *on the same area or acreage*, will reach over a hundred million bushels. The better condition of the working classes in all parts of the country, enable them to consume a much larger amount of wheat flour, than for several years previous. An average increase in home consumption of one bushel of wheat, or one-fifth barrel of flour per person, during the year, would amount to fifty million bushels of wheat in this country alone. The only decided deficiency in the European wheat crop positively known up to this date, is in some parts of Germany, where there will be a considerable demand for imported wheat. The tendency of the above facts is, of course, in favor of short supply and high prices.

On the "Bear Side."

1st. The great increase of population all over the West within two years past, including a million of immigrants, mainly of a higher and better class of agricultural workers than previously, and the many million acres of new land broken since 1879, has undoubtedly materially increased the acreage of wheat in many localities—enough so to partly counterbalance the diminished yield per acre.—2d. The heavy, continuous snows of last winter protected many wheat-fields better than in ordinary years. 3d. Though starting late, a large portion of the wheat crop has had time to push forward to maturity, and much of it is already in the shock. At this writing there has been no general attack of rust or other serious trouble. Insects have been rather more destructive than usual—in a few places disastrously so—but this has been limited to small areas as compared with the whole wheat region. —4th. Trustworthy reports indicate that in the great northern wheat belt of Minnesota and Dakota, any deficiency from the poor stand will be fully made up by increased area, and a good yield generally, so that there will probably be an average crop, if no sudden storm disasters occur between now and threshing out.—5th. There is undoubtedly a considerable amount of last year's crop unmarketed, notably so on the Pacific Coast.—6th. The balancing of all trustworthy reports from Europe show that the demand upon this country will be much less than for two or three years past. All of these circumstances and influences will tend to keep the demand down towards, if not below the supply, and prevent much rise in prices if they do not result in a decline.

General Conclusions as to Selling.

The leading facts and circumstances on both sides are set forth above. The great operators in grain and other products, both "bulls" and "bears," have immense sums at stake. They are each spending large amounts of money to privately ascertain the actual facts of the case, and are far better informed than ordinary farmers or dealers can be. Indeed, the common mass of speculators take their cue from the movements of these leaders. If prices were sure to go up in the future, the bulls would buy all the wheat offered at present, and even higher rates. If the bears were sure of a decline, they would not buy at any present rates, but would oversell the market very largely. For ourselves, we believe future prices are just about as likely to go up as down, or down as up. So, the only safe rule for us is, *to sell when ready*, to take as little risk as possible of damage in storage; and being ready, and having sold, to simply say, "I have done the best I could." Then if prices go down, say, "Well, I was lucky." If they go up, "I might have done better to hold on, but if I had, it might have been different, and so I will not worry over it."

The Cultivation of Ginseng.—The root of Ginseng (*Aralia quinquefolium*) brings a high price for export, and the growing scarcity of the plant in its native localities, suggests the idea of its cultivation, hence we every now and then have enquiries on the subject. The plant is naturally found in the rich soil and in the shade of deep woods, whether it would succeed in open field culture is doubtful, but knowing of no experiments, we can not say that it will not. Plants that naturally grow in low wet grounds, often flourish in a surprising manner when transferred to dry soil, and it cannot

be known until the trial is made, whether the deep shade of woods is essential to the Ginseng. If it is found that the plant will not succeed without shade, that can be supplied, provided the root is productive enough and sells high enough to pay. If shade is necessary, the culture might be carried on in vineyards, hop yards, or some shade might be grown purposely for it. Those who ask for information on the subject should get a few roots from their native localities and make a trial.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, from our record kept daily during the year, show at a glance the transactions *for the month ending Aug. 5th*, 1881 (as compared with the preceding month), and for the corresponding period last year:

1. TRANSACTIONS AT THE NEW YORK MARKETS.

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
26 d's *this* m'th	435,000	5,346,000	6,971,000	12,000	——	1,161,000
24 d's *last* m'th	424,000	4,558,000	5,733,000	42,100	22,000	1,631,000
SALES.	*Flour*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
26 d. *t'sm'th*	471,000	45,063,000*	22,672,000*	84,500*	500	4,823,000
24 d. *l t* m'th	466,500	43,385,000*	15,195,000*	57,000*	——	3,831,000*

* Including forward delivery.

2. *Comparison with same period at this time last year.*

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
26 days 1881	435,000	5,346,000	6,971,000	12,100	219,000	1,061,000
27 days 1880	407,000	7,864,000	5,878,000	63,000	——	926,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
26 days 1881	471,000	45,063,000	22,672,000	84,500	500	4,823,000
27 days 1880	419,000	25,166,000	14,181,000	239,000	——	2,283,000

3. *Stock of Grain in store in New York.*

	Wheat bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.	*Malt.* bush.
Aug. 1, '81	4,715,500	2,463,000	39,850	7,550	1,705,400	14,672
July 5, '81	2,098,381	964,894	53,622	18,943	1,565,080	81,704
Aug. 10, '80	3,046,607	1,784,441	46,004	25,283	78,910	202,563
Aug. 9, '79	1,683,000	1,513,000	99,650	45,100	351,400	160,000
Aug. 13, '78	1,127,000	598,750	62,650	208,200	472,400	137,000

4. *Exports from New York, last two months:*

	Flour. bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.
Last month	283,000	2,758,000	4,473,000	31,800	——	54,400
Prev. m'th	274,500	2,475,000	4,233,000	71,600	6,950	12,100

5. *Exports from New York, Jan. 1 to Aug. 6.*

Flour. bbl..	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.	*Peas.* bush.
'81	2,991,000	25,438,000	21,256,000	712,000	15,000	136,000	174,000
'80	2,511,000	37,100,000	30,148,000	958,000	271,000	307,000	221,000
'79	1,814,000	28,185,000	21,412,000	2,607,0 0	106,000	369,000	231,000
'78	1,508,090	27,101,200	18,239,000	2,564,900	1,515,150	2,086,000	306,100

CURRENT WHOLESALE PRICES.

	July 6, 1881.	Aug. 6, 1881.
FLOUR—Superfine	$4 00 @ 4 65	$4 10 @ 4 75
" Extra Southern	4 90 @ 7 50	4 85 @ 7 50
" Extra Western	4 65 @ 8 50	4 80 @ 8 25
" " Minnesota	4 65 @ 8 25	4 80 @ 8 25
" Rye, Superfine	5 25 @ 5 75	5 15 @ 5 75
CORN-MEAL, ₩ bbl	2 75 @ 3 40	2 90 @ 3 50
WHEAT—All kinds of White	1 10 @ 1 25	1 15 @ 1 27½
" Red and Amber	1 00 @ 1 30	1 05 @ 1 30
" Spring	90 @ 1 21	90 @ 1 23
CORN—Yellow	53 @ 57	57 @ 63
" White	54 @ 60	58 @ 64
" Mixed	48 @ 57	48 @ 60
OATS	41 @ 49	43 @ 50
RYE	1 03 @ 1 08½	85 @ 91
HAY—Bale, ₩ 100 lbs	45 @ 90	50 @ 1 00
STRAW, ₩ 100 lbs	45 @ 80	45 @ 90
COTTON, Middlings, ₩ lb	11½@	12¼@ 12⅜
HOPS—crop of 1880, ₩ lb	15 @ 23	15 @ 23
" olds, ₩ lb	5 @ 12	5 @ 12
SEED—Clover, W. & St. ₩ lb	6¾@ 8½	7 @ 8¾
" Timothy, ₩ bushel	— @ 2 85	2 75 @ 2 90
" Flax, ₩ bushel	1 35 @ 1 37½	1 30 @ 1 32½
TOBACCO, Kentucky, &c., ₩ lb	4 @ 15½	4 @ 15½
" Seed Leaf, per lb	5½@ 40	5½@ 40
WOOL—Domestic Fleece, ₩ lb	24 @ 46	21 @ 47
" Domestic, pulled	24 @ 48	24 @ 46
" California	18 @ 30	14 @ 35
TALLOW, ₩ lb	6½@ 6¾	6¾@ —
OIL-CAKE—₩ ton	30 25 @ —	31 00 @ —
PORK—Mess, ₩ bbl	16 00 @17 25	18 00 @ —
" Extra Prime, ₩ bbl	12 75 @13 75	13 75 @ —
BEEF—Extra Mess	11 25 @12 00	12 50 @13 00
LARD, in trcs. & bbls, ₩ 100 lb	11 25 @11 75	11 45 @11 65
BUTTER—State, ₩ lb	15 @ 23	16 @ 25
" Western, poor to f'cy, lb	10 @ 21	11 @ 24
CHEESE	7 @ 10	7¼@ 10⅝
EGGS—Fresh, ₩ dozen	15 @ 18	15 @ 19

Current Prices of Flour and Grain in New York, August 6:

	1880.	1881.
FLOUR: Ship X—per bbl	$4 15 @ 4 85	$4 80 @ 5 15
No. 2 RED WHEAT—per bushel	1 03¾@ 1 09	1 28 @ 1 28½
No. 1 WHITE WHEAT—per bush	1 08 @ 1 10	1 27 @ 1 27½
No. 2 SPRING WHEAT— "	1 06 @ 1 08	1 23 @ —
No. 2 CORN— "	47¾@ 48	60 @ —
PRIME STATE RYE— "	83 @ —	91 @ —
No. 2 OATS— "	35 @ 35½	45½@ —

Produce and Merchandise markets have shown unusual animation for the Summer season. Most kinds of merchandise have been ruling firm as to prices, with, near the close, a strong and buoyant range of quotations given for Dry Goods, Hardware, Lumber, and Boots and Shoes, in which the promise of a brisk and profitable trade, through the Fall season, is regarded as very encouraging, especially when the position and outlook for domestic produce are considered....Breadstuffs, Provisions, and Cotton, are practically under speculative control, which, in the instance of Breadstuffs, has shown its influence recently, here and at Chicago, with decided emphasis, carrying prices from heaviness and irregularity early in the month, under review, to renewed and pronounced buoyancy, aided in this by the reported deficiencies in the yield of the new crop of Winter Wheat, probable shortage also on the new crop of Spring Wheat and critical condition of the Corn crop from insects, drouth, etc.—all of these circumstances have been worked to the utmost in the interest of the great speculative holders of Grain, who seem to have increased confidence in the future course of values. The export demand, which has been on the increase, the later advices by Cable having been favorable, served to strengthen the general position of this important interest. Operators who believe in a low range of quotations, as to result from what they regard as the inevitable shrinkage of the outward movement, up to next harvest, from the more satisfactory yield this year of the Cereal and Root crops of Europe, have been making determined resistance to the recent upward course of the market, but with seemingly little avail, the prevalent opinion having been on the other side of the account. Wide fluctuations occurred in Wheat, Corn, and Oats, especially in Oats, chiefly through speculative manipulation, but the tendency at the close was to renewed and increasing firmness. At Chicago and here, stocks of Wheat have been accumulating, speculative holders keeping supplies well in hand—at Chicago mostly to provide for maturing contract obligations—here to await developments, which, it is believed, must prove advantageous to parties having any important quantities of Wheat or Corn to dispose of. Most of the Winter Wheat now arriving is of the new crop, and makes a good average as to qualities. Flour has been in fair, though not very urgent demand, mainly for home use, and has hardened a little in price. Rye, which declined rapidly a few weeks since, has been more sought after toward the close at advancing figures....Cotton has been moderately active, and left off higher than a month ago ...Tobacco has been attracting more attention, partly to meet the requirements of the contract for Kentucky Leaf, recently awarded by the Spanish Goverment, and prices have been quoted somewhat steadier....Provisions have been very unsettled, and active only in the instance of Western Steam Lard, for future delivery, but closed generally with more firmness, and offered with less eagerness....Hay and Straw have been quoted stronger, and in good demand....Wool has been quoted easier in price, on more liberal offerings, and a restricted trade....Ocean Grain Freights have been variable, but leave off more firmly, with more call for accommodation, including to Liverpool by steam at 5*d.*; to London at 5*d*; to Glasgow at 5½*d*; to Avonmouth at 5*d.* @5¼*d.*; to Rotterdam at 6*d.*@6½*d.*; to Antwerp at 6*d.* per bushel; and on flour by steam for British ports at 13*s.* 9*d.*@18*s.* 9*d.* Moderately active, with sailing vessels of average carrying capacity—say 3,000 to 4,000 qrs.—closing here for Cork and orders at the advanced rates of 4*s.* 10½*d* @5*s.* per qr. of 480 lbs. The visible supplies of Wheat—embracing the hoards at lake ports, in transit, and on the seaboard—at latest dates, embraced about 15,622,000 bushels; of Corn, 15,951,600 bushels, and of Oats, 7,511,000 bushels. Against, at the same time a year ago, of Wheat, 14,272,000 bushels; Corn, 16,740,000 bushels; and of Oats, 1,516,400 bushels.

Prices of Fertilizers.

Nitrate of Potash (95 per cent), per lb	7½@8½c.
Sulphate of Potash (potash 44 per cent), per lb	3½@4 c.
do. do. (potash 27½ per cent, per lb	1½@1¾c.
German Potash Salts (potash 12 to 15 p. c.), p. ton	$12.00@15.00
Muriate of Potash (potash 50 per cent), per lb	2¼@2½c.
Nitrate of Soda, per lb	3¾@4c.
Sulphate of Ammonia (25 per cent), per lb	5@5¼c.
Dried Blood (ammonia 13 per cent), per ton	$52.00@51.00
No. 1 Peruv. Guano, guaranteed, ₩ ton	60.00
Soluble Pacific Guano, per ton	45.00
Excelsior Fertilizer Co., Fine Ground Raw Bone	45.00
Mapes' Complete Manure (clay soils), per 1,000 lbs	28.00
do. do. do. (light soils), per 1,000 lbs	26.50
do. do. do. "A" Brand (wheat), ₩ 1,000 lbs	21.00
do. Tobacco do. do.	58.00
do. Fruit and Vine Manure, per ton	37.00
do. Pure Raw Bone, per ton	38.00
Matfield Fertilizer, No. 1	45.00
do. do. No. 2	30.00
Homestead Superphosphate, per ton	40.00
do. Tobacco Grower, per ton	60.00
Banner Raw Bone Flour, per ton	45.00
Bowker's Wheat Phosphate, per ton	40.00
do. Acid Phosphate, per ton	25.00
do. Soluble Bone, per ton	35.00
do. Grain Phosphate, per ton	40.00
do. Hill and Drill Phosphate, per ton	45.00
Stockbridge Corn manure, per ton	50.00
do. Potato manure, per ton	50.00
Stockbridge Rye Manure, per ton	45.00
do. Wheat Manure, per ton	45.00
do. Seeding Down Manure, per ton	40.00
Walton, Whann & Co.'s Raw Bone Phosphate, per ton	40.00
Gypsum, Nova Scotia, ground, per ton	8.00

The Increase of Flax Culture.—We are glad to learn that there has been, the present year, a marked increase in the area devoted to flax, not only in localities where it is usually raised, but that its culture has been undertaken in places where it is entirely new, at least to the present generation. A correspondent in Pennsylvania writes us of the success of the American Vegetable Fibre Company of Philadelphia. In June of last year we figured the Flax Brake belonging to this company, and described it as an agent likely to greatly promote the growth of flax, as it simplified one of the chief obstacles to its culture. The Company not only make the machinery for cleaning flax, but have gone into the cultivation of the fibre, at their farm on the Delaware River. According to our correspondent, their field of twenty acres of flax, gave at the recent harvest a crop, that for hight, weight, and firmness, astonished all who saw it. We shall be glad to have the promised account of the method of cultivation, fertilizers, and the yield, that they may be made useful to others.

The American Pomological Society.—All fruit growers will bear in mind the fact that the 18th biennial session of this Society will be held in Boston on Wednesday, September 14th, at 10 o'clock A. M., and continue for three days. Members of the Society will of course attend, and all fruit growers who are not members should at once become so. The Boston meetings have heretofore been most enjoyable, and it is reported that the coming one will be of special interest. As usual, an exhibition of fruits will be held, but large collections of well-known fruits are not desired. Those who have new varieties, or other specimens of special interest, are requested to send them, prepaying express charges, in care of the Massachusetts Horticultural Society.

Our Book Table.

Silos and Ensilage.—The preservation of Fodder Corn and other green forage crops by ensilage, that is, by packing them in air-tight pits, has been practised in this country to a sufficient extent, and has been so far eminently successful as to awaken a wide interest in the subject. The experience of those who have experimented with ensilage is scattered through the various journals in valuable articles, or is given in books published in part with some secondary object. The present work brings together, in a compact volume, whatever is essential for one who is about to undertake this method of preserving fodder to know, divested of all extraneous matter. Its object is to give our present knowledge of this important agricultural appliance, in a manner that will allow the American farmer to see what has been done, and to suggest how he may improve upon the practices of those who have preceded him. It is only necessary for the Publishers to state that the volume is edited by Dr. George Thurber, to indicate its scope and reliability. Published by the Orange Judd Company. Post-paid, 50c.

The Saddle-Horse.—Americans, especially those of the Northern States, make surprisingly little use of the saddle-horse. They possess the finest roadsters in the world, and the poorest riding horses. That a change in this respect is pending is shown by the number of inquiries that have been made of late for a work upon horseback riding. Aside from the greater benefit that the individual receives from riding instead of driving, it is to one who lives in the country a vastly more economical method of locomotion, the expense of vehicle and harness being avoided. Moreover, one on horseback can go without reference to roads, and this is of itself a great advantage to one who has to direct the operations upon a large farm. To teach how to ride, and to ride well, is the object of the present work. To ride properly, it is necessary that the horse, as well as the rider, be taught, for there can be no pleasure in riding unless the horse and rider both move under the same impulse—that of the rider—and a large share of the work is properly given to the training of the horse. All the accessories—such as saddles, bridles, bits, and spurs—receive proper attention, and the use of each is thoroughly explained and fully illustrated. Published by the Orange Judd Company, and sent post-paid for $1.00.

The American Bird Fancier, by D. J. Browne and Dr. Fuller Walker, meets a want for a work on the rearing and treatment of birds. That birds properly cared for may be quite as comfortable in confinement as when at liberty is now admitted, and it is well known that certain birds, as well as certain quadrupeds, are especially adapted to, and enjoy domestication readily, becoming the companions of man, and return the care given them by cheerful song. To point out the native and other birds best suited to domestication, and to indicate the proper treatment of each, is the object of the present work. Published and sent, post-paid, by the Orange Judd Company, for 50 cts.

State, County, and Other Fairs in 1881.

STATE FAIRS.

Arkansas	Little Rock	Oct. 17-22
California	Sacramento	Sept. 19-24
Connecticut	Meri en	Sept. 20-23
Delaware	Dover	Sept. 26-Oct. 5
Georgia	Macon	Oct. 17-22
Illinois	Peoria	Sept. 26-Oct. 1
Indiana	Indianapolis	Sept. 26-Oct. 1
Iowa	Des Moines	Sept. 5- 9
Kentucky	Lexington	Aug. 30-Sep. 3
Kansas	Topeka	Sept. 12-17
Maine	Lewiston	Sept. 6- 9
Maryland	Baltimore	Oct. 26-30
Michigan	Jackson	Sept. 19-24
Minnesota	Rochester	Sept. 5-10
Mississippi	Aberdeen	Oct. 11-15
Montana	Helena	Sept. 26-Oct. 1
Nebraska	Omaha	Sept. 12-17
New Jersey	Waverley	Sept. 19-23
New York	Elmira	Sept. 12-17
North Carolina	Raleigh	Oct. 10-15
Ohio	Columbus	Aug. 29-Sept. 2
Pennsylvania	Pittsburg	Sept. 5-17
Rhode Island	Cranston	Sept. 27-30
South Carolina	Columbia	Nov. 8-11
Texas	Austin	Oct. 18-22
Vermont	Montpelier	Sept. 13-16
Virginia	Richmond	Oct. 17 27
West Virginia	Wheeling	Oct. 3- 7
Wisconsin	Fond du Lac	Sept. 26-30

Industrial and District Fairs.

Am. Institute	New York	Sept. 17-Nov. 26
Canada, Central	Guelph	Oct. 4- 6
Canada Dominion	Halifax, N. S	Sept. 21-30
Central Michigan	Lansing	Oct. 3- 7
Chicago Expos'n	Chicago, Ill	Sept. 7-Oct. 22
Chicago Fat Sto'k	Chicago	Nov. 7-12
Chicago Exhibi'n		Sept. 7-Oct. 22
Cincinnati Ind. Ex	Cincinnati	Sept. 7-Oct. 8
Cotton Exhibiti'n	Atlanta, Ga.	Oct. 5-Dec. 31
Illinois State Hor	Chicago, Ill	Sept. 7-Oct. 21
Inter-State Fair	Hamburg, Iowa	Sept. 19-22
Mich. Western	Grand Rapids	Sept. 26-30
Milwaukee Exp'n		Sept. 6-Oct. 15
Minn. Ass'n	Minneapolis	Sept. 5- 9
Miss. Stock Show	Meriden	Oct. 31-Nov. 5
National Fair	Washington, D.C.	Oct. 18-28
N. York Dairy'n	Rome	Sept. 19-23
New England	Worcester, Mass.	Sept. 6-10
N. Eas'n. Indiana	Waterloo	Oct. 3- 8
Northern Indiana	Fort Wayne	Sept. 26-30
Northern Kent'y	Florence	Aug. 30-Sept. 3
Northwestern Ex	Minneapolis, Min	Sept. 5- 9
N. W. Ag. Mech	Oshkosh, Wis	Sept. 12-16
Ohio Central	Mechanicsburg	Sept. 13-16
Ohio Southern	Dayton	Sept. 26-30
Ontario, Provin'l	London	Sept. 21-30
Tri-State Ass'n	Toledo, O	Sept. 12-17
West. Nat'l Fair	Bismarck Gr'e, Kan. S.	5-10
C. Wis. A. & M. A.	Watertown, Wis.	Sept. 19
S. Wis. & N. Ill. A.	Beloit	Sept. 6
Pittsburg Exp'n		Sept. 5-Oct. 8
St. Louis Expo'n	St. Louis, Mo	Oct. 3- 8
N. Y. Western	Rochester	Sept. 27-30
W. Va. Central	Clarksburg	Sept. 6- 8

County Fairs.

MAINE.

Franklin	Farmington	Oct. 11-13
Franklin Central	Strong	Sept. 24-25
Knox	Camden	Oct. 4- 6
Knox, North	Union	Oct. 4- 6
Lincoln	Damariscotta	Sept. 27-29
Oxsipee Valley	Cornish	Sept. 20-22
Oxford, South	South Parish	Sept. 27-29
Oxford, West	Fryeburg	Oct. 11-13
Penobscot	Hampden	Sept. 23-29
Penobscot, North	Lincoln	Sept. 28-29
Penobscot, West	Exeter	Sept. 27-28
Piscataquis Cent.	Foxcroft	Oct. 4- 6
Sagadahoc	Topsham	Oct. 11-13
Waldo & Penob't	Monroe	Oct. 5- 6
Waldo	Belfast	Sept. 27-28
Waldo, North	Unity	Oct. 12-13
Washington, W't	Machias	Sept. 20-21

NEW HAMPSHIRE.

Belknap	Laconia	Sept. 20-23

VERMONT.

Addison	Middlebury	Sept. 5- 7
Caledonian	St. Johnsbury	Sept. 20-22

MASSACHUSETTS.

Barnstable	Barnstable	Sept. 27-28
Berkshire	Pittsfield	Oct. 4- 6
Bristol	Taunton	Sept. 27-29
Deerfield Valley	Charlemont	Sept. 22-23
Essex	Haverhill	Sept. 27-28
Franklin	Greenfield	Sept. 29-30
Hampden	Holyoke	Sept. 27-29
Hampden, East	Palmer	Sept. 20-21
Hampshire	Amherst	Sept. 22-23
Hampshire, Fr'k-lin & Hampden	Northampton	Oct. 5- 7
Highland	Middlefield	Sept. 15-16
Hingham	Hingham	Sept. 13-14
Hoosac Valley	North Adams	Sept. 20-21
Housatonic	G't Barrington	Sept. 28-30
Marshfield	Marshfield	Sept. 14-16
Martha's Viney'd.	W. Tisbury	Oct. 4- 5
Middlesex	Concord	Sept. 28-30
Middlesex, North	Lowell	Sept. 27-28
Middlesex, South.	Framingham	Sept. 20-21
Nantucket	Nantucket	Sept. 7- 8
Plymouth	Bridgewater	Sept. 21-23
Union	Blandford	Sept. 21-23
Worcester	Worcester	Sept. 6- 9
Worcester, North	Fitchburg	Sept. 27-28
Worcester, N. W.	Athol	Oct. 4- 5
Worcester, South	Sturbridge	Sept. 15-16
Worcester, S. E.	Milford	Sept. 27-30
Worcester, West.	Barre	Sept. 29-30

RHODE ISLAND.

Aquidneck	Newport	Sept. 6- 8
Washington	West Kingston	Sept. 13-15
Woonsocket	Woonsocket	Sept. 20-22

CONNECTICUT.

Clinton	Clinton	Sept. 21
Danbury	Danbury	Oct. 4- 8
Fairfield	Norwalk	Sept. 13-16
Guilford	Guilford	Sept. 28
Killingworth	Killingworth Centre	Oct. 5
New London	Norwich	Sept. 27-29
New Milford	New Milford	Sept. 28-Oct. 1
Pequabuck	Bristol	Oct. 5- 6
Ridgefield	Ridgefield	Sept. 20-23
Simsbury	Simsbury	Oct. 5- 6
Tolland, East	Stafford Springs	Oct. 6- 7
Union	Falls Village	Sept. 7- 8
Union	Trumbull	Sept. 21-23
Watertown	Watertown	Sept. 27-29
Windham	Brooklyn	Sept. 13-15
Woodbridge and Bethany	Woodbridge	Sept. 28-29
Woodbury	Woodbury	Sept. 14-15
Woodstock	So. Woodstock	Sept. 21-23

NEW YORK.

Alleghany	Angelica	Sept. 27-29
Broome	Whitney's Point	Sept. 6- 9
Cattaraugus	Little Valley	Sept. 6- 8
Chautauqua	Jamestown	Sept. 20-23
Cortland	Cortland	Sept. 6- 8
Delaware	Delhi	Sept. 20-22
Duchess	Washington Hol.	Sept. 20-3
Erie	Hamburg	Sept. 13-16
Essex	Westport	Sept. 13-15
Franklin	Malone	Sept. 27-29
Fulton	Johnstown	Sept. 6- 8
Genesee	Batavia	Sept. 19-21
Gouverneur	Gouverneur	Aug. 31-Sep. 2
Greene	Cairo	Sept. 21-22
Herkimer	Herkimer	Sept. 12-15
Jefferson	Watertown	Sept. 20-22
Lewis	Lowville	Sept. 13-16
Livingston	Geneseo	Sept. 20-21
Montgomery	Fonda	Sept. 13-15
Niagara	Lockport	Sept. 12-24
Oneida	Rome	Sept. 19-23
Onondaga	Syracuse	Sept. 20-23
Ontario	Canandaigua	Sept. 28-30
Orange	Warwick	Sept. 20-23
Orleans	Albion	Sept. 23-24
Otsego	Cooperstown	Sept. 26-28
Oswego	Mexico	Sept. 6- 8
Putnam	Carmel	Sept. 20-23
Queens	Mineola	Sept. 27-29
Rockland	Spring Valley	Sept. 27-29
Rockland Indus'l	Clarkstown	Sept. 28-30
St. Lawrence	Canton	Sept. 13-15
Saratoga	Saratoga	Sept. 20-23
Schoharie	Schoharie	Sept. 20-22
Seneca	Waterloo	Sept. 27-29
So. Ulster Hort'l.	Highland	Sept. 15-16
Steuben	Bath	Sept. 27-30
Suffolk	Riverhead	Oct. 4- 6
Sullivan	Monticello	Sept. 28-29
Tioga	Owego	Sept. 27-29
Tompkins	Ithaca	Sept. 27-29
Tonawanda Valley	Attica	Sept. 13-15
Warren	Glen's Falls	Sept. 13-16
Washington	Sandy Hill	Sept. 6- 9
Wyoming	Warsaw	Sept. 21-23

NEW JERSEY.

Burlington	Mt. Holly	Oct. 11-14
Cumberland	Bridgeton	Sept. 21
Hunterdon	Flemington	Sept. 27-29
Monmouth	Freehold	Sept. 13-15
Somerset	Somerville	Oct. 4- 7
Sussex	Newton	Oct. 4- 7
West Jersey	Woodstown	Sept. 14-15

PENNSYLVANIA.

Armstrong	Kittanning	Sept. 20-23
Bedford	Bedford	Oct. 11-14
Berks	Reading	Sept. 27-30
Bradford	Troy	Sept. 21-23
Bucks	Doylestown	Oct. 4- 7
Butler	Butler	Sept. 20-22
Butler	Harmony	Sept. 27-29
Central	Meadville	Sept. 24-30
Chartiers Valley	Canonsburg	Sept. 27-29
Connoquenessing Valley	Harmony	Sept. 27-29
Crawford	Conneautville	Oct. 5- 7
Crawford	Meadville	Sept. 26-30
Crawford	Titusville	Sept. 20-23
Cumberland	Carlisle	Sept. 27-30
Dauphin	Harrisburg	Sept. 13-16
F and M. Institute	Easton	Sept. 20-23
Erie	Erie	Sept. 13-16
Franklin	Chambersburg	Oct. 4- 7
Gratz	Gratz	Sept. 20-24
Harford	Harford	Sept. 21-22
Lackawanna	Scranton	Sept. 27-30
Lawrence	Newcastle	Sept. 13-16
Lehigh	Allentown	Sept. 27-30
Lycoming	Williamsport	Sept. 20-23
Mercer	Greenville	Sept. 20-22
Mercer	Mercer	Sept. 7- 9
Mercer	Stoneboro	Oct. 5- 7
Montgomery	Ambler Park	Sept. 20-23
Oil Creek	Titusville	Sept. 20-23
Oxford	Oxford	Sept. 28-29
Ringtown	Ringtown	Sept. 4- 7
Schuylkill	Orwigsburg	Sept. 20-23
Shenango Valley	Greenville	Sept. 20-22
Tioga	Wellsboro	Oct. 4- 6
Venango	Franklin	Sept. 21-23
War. en	Sugar Grove	Sept. 13-15
Washington	Cannonsburg	Sept. 27-29
Washington	Washington	Oct. 4- 6
Wayne	Honesdale	Oct. 4- 6
Western Penns'a	Mercer	Sept. 7- 9

MARYLAND.

Baltimore	Timonium	Sept. 6- 9
Cecil	Elkton	Oct. 4- 7
Montgomery	Rockville	Sept. 7- 9
Washington	Hagerstown	Oct. 12-14

DELAWARE.

Peninsula	Middletown	Sept. 20-22

OHIO.

Allen	Lima	Sept. 27-30
Ashtabula	Jefferson	Sept. 27-30
Athens	Athens	Oct. 5- 7
Auglaize	Wapakoneta	Oct. 4- 7
Belmont	St. Clairsville	Sept. 14-16
Brown	Georgetown	Oct. 4- 7
Butler	Hamilton	Oct. 3- 7
Carroll	Carrollton	Oct. 4- 6
Clarke	Springfield	Aug. 23-26
Clinton	Wilmington	Aug. 16-19
Columbiana	New-Lisbon	Sept. 27-29
Coshocton	Coshocton	Oct. 11-14
Crawford	Bucyrus	Sept. 27-30
Cuyahoga	Chagrin Falls	Sept. 27-29
Darke	Greenville	Sept. 12-16
Defiance	Defiance	Sept. 27-30
Delaware	Delaware	Sept. 27-30
Erie	Sandusky	Sept. 20-23
Fairfield	Lancaster	Oct. 12-15
Fulton	Wauseon	Sept. 21-24
Gallia	Gallipolis	Sept. 7-10
Geauga	Burton	Sept. 13-15
Greene	Xenia	Sept. 7- 9
Hamilton	Carthage	Sept. 6- 9
Hancock	Findlay	Oct. 5- 8
Hardin	Kenton	Sept. 28-Oct. 1
Harrison	Cadiz	Oct. 5- 7
Huron	Norwalk	Sept. 27-30
Jefferson	Smithfield	Sept. 28-30
Knox	Mt. Vernon	Sept. 27-30
Lake	Painesville	Sept. 21-23
Lawrence	Ironton	Sept. 13-16
Logan	Bellefontaine	Oct. 4- 7
Lorain	Elyria	Sept. 27-29
Mahoning	Canfield	Oct. 4- 6
Marion	Marion	Oct. 4- 7
Medina	Medina Village	Sept. 13-15
Meigs	Rock Springs	Sept. 14-16
Mercer	Celina	Sept. 21-24
Miami	Troy	Sept 27-30
Morgan	McConnellsville	Sept. 13-16
Morrow	Mt. Gilead	Sept. 20-23
Muskingum	Zanesville	Sept. 6- 9
Ottawa	Port Clinton	Oct. 5- 7
Paulding	Paulding	Sept. 21-23
Perry	New Lexington	Sept. 27-30
Pickaway	Circleville	Sept. 20-30
Portage	Ravenna	Sept. 27-30
Preble	Eaton	Sept. 27-30
Putnam	Ottawa	Oct. 5- 8
Richland	Mansfield	Sept. 27-30
Ross	Chillicothe	Aug. 9- 2
Sandusky	Fremont	Sept. 27-30
Seneca	Tiffin	Oct. 4- 7
Shelby	Sidney	Sept. 27-30
Stark	Canton	Sept. 27-30
Summit	Akron	Oct. 4- 7
Trumbull	Warren	Sept. 13-16
Tuscarawas	Canal Dover	Sept. 27-30
Union	Marysville	Oct. 4- 7
Van Wert	Van Wert	Sept. 29-Oct. 1
Warren	Lebanon	Sept. 20-23
Washington	Marietta	Sept. 13-16
Wayne	Wooster	Oct. 4- 7
Williams	Bryan	Sept. 20-23
Wood	Tontogany	Sept. 27-30

INDIANA.

Allen (N. Ind)	Fort Wayne	Sept. 26-30
Bartholomew	Columbus	Aug. 29-Sep. 2
Blackford	Hartford City	Sept. 20-23
Boone	Lebanon	Aug. 22-27
Cass	Logansport	Sept. 20-24
Clark	Charlestown	Sept. 6- 8
Clay	Brazil	Aug. 29
Daviess	Washington	Oct. 11-15
Decatur	Greensburg	Aug. 23-26
Delaware	Muncie	Sept. 13-16
Elkhart	Goshen	Sept. 27-30
Franklin	Brookville	Aug. 30-Sep. 2
Fulton	Rochester	Sept. 22-24
Gibson	Princeton	Sept. 19-23
Grant	Marion	Sept. 6- 9
Greene	Linton	Oct. 3- 7
Harrison	Corydon	Sept. 5- 9
Howard	Kokomo	Aug. 29-Sep. 2
Huntington	Huntington	Sept. 21-24
Jackson	Brownstown	Aug. 29-Sep. 2
Jasper	Rensselaer	Sept. 13-16
Knox	Vincennes	Oct. 3- 6
La Grange	La Grange	Sept. 21-23
Lawrence	Bedford	Sept. 13-16
Madison	Anderson	Sept. 6- 9
Montgomery	Crawfordsville	Sept. 5-10
Morgan	Martinsville	Oct. 3- 7
Newton	Morocco	Sept. 6- 9
Noble	Ligonier	Oct. 12-15
Perry	Rome	Oct. 3- 8
Pike	Petersburg	Sept. 5- 9
Porter	Valparaiso	Sept. 28-30
Posey	New Harmony	Sept 13-16
Putnam	Greencastle	Sept. 12-17
Randolph	Winchester	Sept. 14-17
Ripley	Osgood	Aug. 16-19
Rush	Rushville	Sept. 13-16
Shelby	Shelbyville	Sept. 6-10
Steuben	Angola	Oct. 11-14
Tippecanoe	Lafayette	Aug. 29-Sept. 3
Tipton	Tipton	Sept. 20-23
Vigo	Terre Haute	Sept. 12-16
Wabash	Wabash	Sept. 13-16
Warren	West Lebanon	Sept. 12-16
Wells	Bluffton	Sept. 20-23
Whitley	Columbia City	Oct. 4- 7

DISTRICT.

Bridgton Union	Bridgton	Aug. 22-27
Dunkirk U. Fair	Dunkirk	Sept. 7-10
Edinburg Union	Edinburg	Sept. 20-24
Fountain, W. & V. Co	Covington	Sept. 20-23
Henry, Mad. & Del.	Middletown	Aug. 23-26
Knightstown U'n.	Knightstown	Aug. 30-Sep. 2
Lawrenceburg A. A.	Lawrenceburg	Aug. 23-27
Loogootee A. & M.	Loogootee	Sept. 13-17
New Ross Union	New Ross	Aug. 15-21
Orleans Ag. F. Co.	Orleans	Sept. 4- 8
Prairie Farmers.	Francesville	Sept. 6- 9
Russellville Union	Russellville	Aug. 22-27
S. E Indiana	Aurora	Sept. 5-10
Switz'd & O. Co. A. S.	East Enterp'e	Sep. 13-16
Thorntown Union	Thorntown	Aug. 8
U'n Ag'l & Mec'l.	Union City	Sept 20-23
Wor'n Far. & Mec's	Worthington	Oct. 4- 7
Xenia U. D. A. S.	Xenia	Aug. 30-Sep. 3

ILLINOIS.

Adams	Camp Point	Sept. 5- 9
Boone	Belvidere	Sept. 6- 9
Brown	Mt. Sterling	Aug. 22-26
Bureau	Princeton	Sept. 20-23
Carroll	Mt. Carroll	Sept. 6- 9
Cass	Virginia	Sept. 13-16
Champaign	Champaign	Aug. 30-Sept. 2
Clay	Flora	Sept. 27-30
Coles	Charleston	Sept. 13-17
Crawford	Robinson	Sept. 27-30
Cumberland	Prairie City	Sept. 28-Oct. 1
DeKalb	Sandwich	Sept. 19-23
DeKalb	Sycamore	Sept. 20-23
DeWitt	Clinton	Aug. 23-26
Douglas	Tuscola	Sept. 13-18
DuPage	Wheaton	Sept. 6- 8
Edgar	Paris	Sept. 6- 9
Edwards	Albion	Oct. 4- 7
Effingham	Effingham	Oct. 4- 7
Fayette	Vandalia	Sept. 21-23
Ford	Paxton	Aug. 30-Sept. 2
Franklin	Benton	Oct. 11-14
Fulton	Canton	Oct. 4- 7
Fulton	Avon	Sept. 20-23
Gallatin	Shawneetown	Aug. 30-Sep. 2
Greene	Carrollton	Oct. 18-21
Hamilton	McLeansboro	Sept. 13-17
Hancock Hort'l.	Warsaw	Oct. 19-21
Henderson	Biggsville	Sept. 13-16
Henry	Cambridge	Aug. 29-Sept. 2
Iroquois	Onarga	Sept. 13-16
Iroquois	Watseka	Aug. 15
Jackson	Carbondale	Oct. 11-14
Jasper	Newton	Sept. 20-23
Jefferson	Mt. Vernon	Oct. 11-14
Jersey	Jerseyville	Oct. 11-14
Jo Daviess	Galena	Sept 27-30
Jo Daviess	Warren	Sept. 13-16
Kane	Aurora	Sept. 13-16
Kendall	Bristol	Sept. 6- 9
Knox	Knoxville	Sept. 12-16
Lake	Libertyville	Sept. 21-23
Lake	Waukegan	Sept. 26 Oct. 1
LaSalle	Ottawa	Sept. 5-10
Livingston	Pontiac	Sept. 13-16
Livingston	Fairbury	Sept. 5- 9
Logan	Lincoln	Aug. 29-Sep. 2
Logan	Atlanta	Sept. 6- 9
Macon	Decatur	Sept. 20-23
Macoupin	Carlinville	Sept. 6- 9
Marion	Centralia	Sept. 27-30
Marshall	Wenona	Sept. 19-23
Mason	Havana	Oct. 4- 7
Massac	Metropolis	Sept. 13-16
McDonough	Macomb	Sept. 13-16
McHenry	Woodstock	Sept. 13-16
McLean	Bloomington	Sept. 21-24
Mercer	Aledo	Sept. 20-23
Montgomery	Hillsboro	Sept 27-30
Morgan	Jacksonville	Aug. 22-26
Moultrie	Sullivan	Sept. 20-23
Ogle	Oregon	Sept. 20-23
Ogle	Rochelle	Sept. 6- 9
Perry	Pinckneyville	Oct. 4- 7
Piatt	Monticello	Aug. 15-19
Pike	Pittsfield	Sept. 20-23
Pope	Golconda	Oct. 5- 8
Randolph	Sparta	Sept. 28-30
Randolph	Chester	Oct. 11-14
Richland	Olney	Sept. 13-17
Rock Island	Port Byron	Sept. 7- 9
Rock Island	Hillsdale	Sept. 14-16
Sangamon	Springfield	Sept. 12-17
Schuyler	Rushville	Aug. 30 Sep. 2
Shelby	Shelbyville	Sept. 20-24
Stark	Wyoming	Sept. 6- 9
Stark	Toulon	Sept. 20-23
St. Clair	Belleville	Oct. 11-14
Tazewell	Delavan	Sept. 13-16
Union	Jonesboro	Sept. 13-17
Vermilion	Catlin	Sept. 13
Vermilion	Danville	Sept. 20-24
Vermilion	Hoopeston	Aug. 22-26
Warren	Monmouth	Sept. 6- 9
White	Carmi	Sept. 6-10
Whiteside	Sterling	Sept. 13-16
Whiteside	Morrison	Sept. 6- 9
Whiteside	Albany	Aug. 31-Sep. 2
Williamson	Marion	Sept. 27-30
Winnebago	Rockford	Sept. 12-16
Woodford	El Paso	Sept. 12-17

MICHIGAN.

Allegan	Plainwell	Oct. 4- 7
Armada	Armada	Oct. 5- 7
Bay	Bay City	Sept. 20-23
Benzie	Benzonia	Sept. 28-29
Branch	Coldwater	Sept. 27-30
Calhoun	Marshall	Sept. 26-29
Cass	Cassopolis	Sept. 28-30
Clinton	St. Johns	Sept. 27-30
Grand Traverse	Traverse City	Oct. 3- 6
Gratiot	Ithaca	Oct. 5- 7
Hillsdale	Hillsdale	Oct. 4- 7
Ingham	Mason	Sept. 26-30
Ionia	Ionia	Oct. 4- 7
Kalamazoo	Schoolcraft	Sept. 27-30
Lenawee	Adrian	Sept. 26-30
Livingston	Howell	Sept. 27-30
Macomb	Richmond	Sept. 14-16
Mason	Ludington	Sept. 28-30
Monroe	Monroe	Oct. 4- 7
Oakland	Pontiac	Aug. 30-Sep. 2
Oceana	Hart	Sept. 20-23
Osceola	Evart	Sept. 27-30
Tuscola	Watrousville	Oct. 5- 7
VanBuren	Paw Paw	Oct. 4- 7
Union	Ovid	Sept. 11-13

WISCONSIN.

Chippewa	Chippewa Falls	Sept. 20
Calumet	Chilton	Oct. 5
Dane	Madison	Sept. 19
Dodge	Juneau	Oct. 3
Grant	Lancaster	Sept. 21
Iowa	Dodgeville	Oct. 5
Outagamie	Appleton	Sept. 7
Racine	Burlington	Sept. 13
Sheboygan Co. G. and Ind. Society	Sheboygan	Oct. 4
Walworth	Elkhorn	Sept. 20
Waukesha	Waukesha	Oct. 4

IOWA.

Agency City Dis't	Agency City	Oct. 4- 7
Alamakee	Waukon	Sept. 20
Appanoose	Centerville	Aug. 30-Sep. 2
Benton	Vinton	Sept. 13-16
Black Hawk	Waterloo	Sept. 20-22
Boone Dist	Boone	Sept. 13-16
Botna Valley Dist	Avoca	Sept. 12-14
Bremer	Waverly	Sept. 21-24
Buchanan	Independence	Oct. 4- 7
Chickashaw	New Hampton	Sept. 28-30
Clayton	Farmersburg	Sept. 14-16
Dallas	Adel	Aug. 31-Sept. 2
Decatur	Leon	Sept. 13-16
Delaware	Manchester	Sept. 6- 9
Dist. at Mechv'lle	Mechanicsville	Sept. 13-16
Dist. at Mt. Joy	Davenport	Sept. 13-16
Floyd	Charles City	Sept. 13-16
Franklin	Hampdon	Sept. 14-16
Grundy	Grundy Center	Sept. 21-23
Guthrie	Guthrie Centre	Sept. 28-30
Hamilton	Webster City	Sept. 27-29
Hardin	Eldora	Sept. 13-16
Harrison	Mo. Valley	Oct. 4- 6
Iowa	Marengo	Sept. 20-22
Jackson	Maquoketa	Sept. 6- 9
Jasper	Newton	Sept. 27-30
Jefferson	Fairfield	Sept. 27-29
Johnson	Iowa City	Sept. 13-16
Jones	Monticello	Aug. 30-Sep. 2
Keokuk	Sigourney	Sept. 20-23
Louisa	Wapello	Sept. 20-22
Lucas	Charlton	Sept. 21-23
Madison	Winterset	Aug. 30-Sep. 2
Marion	Knoxville	Aug. 25-26
Marshall	Marshall'wn	Aug. 31-Sep. 2
Mitchell	Osage	Sept. 13-16
Monroe	Albia	Sept. 13-16
Montgomery	Red Oak	Sept. 27-30
Moulton Dist	Moulton	Sep. 28-Oct. 1
Maple Valley Dist	Battle Creek	Sept. 13-14
Plymouth	Le Mars	Sept. 21-23
Poweshiek Cen'l.	Malcom	Sept. 13-15
Scott	Davenport	Sept. 5- 9
Shelby	Harlan	Sept. 22-23
Stuart District	Stuart	Oct. 4- 6
Tama	Tama City	Sept. 20-22
Taylor	Bedford	Sept. 13-17
Union Dist	La Porte City	Sept. 13-16
Union Dist	Villisca	Sept. 15-18
Union Dist	Wt. Liberty	Aug. 31-Sep. 2
Van Buren	Keosauqua	Sept. 13-16
Warren	Indianola	Sept. 27-29
Washington	Washington	Sept. 13-16
Winneshiek	Decorah	Sept. 20-22
Woodbury	Souix City	Sept. 13-15

NEBRASKA.

Cass	Plattsmouth	Sept. 7- 9
Fillmore	Geneva	Sept. 27-29
Hall	Grand Island	Sept. 7- 9
Johnson	Tecumseh	Sept. 21-24
Kearney	Minden	Sept. 7- 9
Lancaster	Lincoln	Sept. 6- 9
Otoe	Nebraska City	Aug. 29-S. 3
Pawnee	Table Rock	Sept. 27-30

KANSAS.

Anderson	Garnet	Oct. 4- 6
Atchison	Atchison	Sept. 26-30
Brown	Hiawathia	Sept. 27-30
Butler	ElDorado	Oct. 4- 6
Cherokee	Columbus	Sept. 21-24
Coffey	Burlington	Sept. 20-23
Crawford	Girard	Sept. 28-30
Davis	Junction City	Oct. 4. 7
Doniphan	Troy	Sept. 20-24
Douglas	Lawrence	Sept. 5-10
Elk	Howard	Sept. 27-30
Ellis	Hays City	Sept. 28-30
Ellsworth	Ellsworth	Sep. 29-Oct. 1
Franklin	Ottawa	Sept. 27-30
Greenwood	Eureka	Oct. 4- 6
Harper	Anthony	Sept. 22-23
Harvey	Newton	Sept. 20-23
Jefferson	Oskaloosa	Sep. 27-Oct. 1
Jewell	Mankato	Sept. 7- 9
Kingman	Kingman	Sept. 1- 2
Labette	Oswego	Sept. 14-17
Linn	LaCygne	Sept. 20-23
Linn	Mound City	Sept. 27-30
Lyon	Emporia	Sept. 20-24
Marion	Peabody	Sept. 28-30
Marshall	Marysville	Sept. 6- 9
Miami	Paola	Sept. 28-Oct. 1
Mitchell	Beloit	Sept. 28-30
Montgomery	Independence	Oct. 6- 8
Morris	Parkerville	Sept. 13-15
Osage	Burlingame	Sept. 27-30
Osborne	Bloomington	Sept. 21-23
Ottawa	Minneapolis	Oct. 4- 6
Phillips	Phillipsburgh	Sept. 27-29
Reno	Hutchinson	Sept. 6 9
Riley	Manhattan	Sept. 19-23
Rooks	Stockton	Sept. 28-30
Saline	Salina	Oct. 5- 7
Sedgwick	Wichita	Sept. 20-23
Sumner	Wellington	Sept. 7- 9
Woodson	Neosho Falls	Sept. 26-Oct. 1

KENTUCKY.

Anderson	Lawrenceburg	Aug. 16-19
Barren	Glasgow	Oct. 4- 7
Bath	Sharpsburg	Aug. 2- 5
Boone	Florence	Aug. 30-Sept. 3
Bourbon	Paris	Sept. 6-10
Christian	Hopkinsville	Oct. 5- 8
Harrison	Cynthiana	Aug. 25-29
Henry	Eminence	Sept. 21-24
Madison	Richmond	Aug. 9-12
Mason	Maysville	Sept. 20-23
Mason & Bracken	Germantown	Sept. 14-17
Mercer	Harrodsburg	Aug. 2- 5
Owen	New Liberty	Oct. 4- 8
Pendleton	Falmouth	Sep. 27-Oct. 1
Simpson	Franklin	Sept. 15-17
Warren	Bowling Green	Sept. 8-10

MISSOURI.

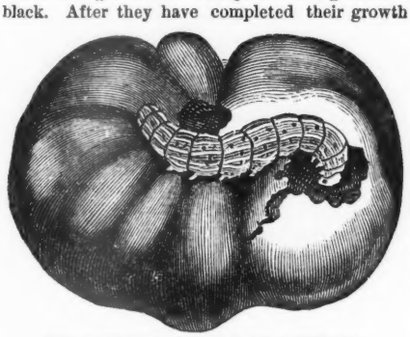
Audrain	Mexico	Aug. 30-Sep. 3
Boone	Columbia	Sept. 6-10
Boone	Sturgeon	Aug. 30-Sep. 3
Callaway	Fulton	Aug. 23-27
Cole	Jefferson City	Sept. 13-17
Jackson	Kansas City	Sept. 12-17
Lafayette	Lexington	Aug. 23 27
Lafayette	Higginsville	Aug. 23-27
Knox	Edina	Oct. 4- 6
Marion	Hannibal	Sept. 27 Oct. 1
Moniteau	California	Sept. 27-30
Monroe	Paris	Sept. 6-10
Montgomery	Montgomery City	Sep. 22-26
Pettis	Sedalia	Sept. 20-24
Pike	Louisiana	Aug. 16-20
St. Louis	St. Louis	Oct. 5- 8
Saline	Sweet Springs	Aug. 15-20

SOUTH CAROLINA.

Anderson	Anderson	Oct. 19-21
Chester	Chester	Oct. 4- 7
Darlington	Darlington	Oct. 27-29
Greenville	Greenville	Oct. 11-14
Newberry	Newberry	Oct. 19-21
Sumter	Sumter	Oct. 25-29
Union	Union	Oct. 25-27

The Green-Corn Worm.

Specimens of green corn from "R. K.," Oakfield, Wis., show the kernels of the upper end of the ear badly eaten. Though the doer of the mischief had escaped, we at once recognized its work, as the same that about ten years ago made trouble in our own garden and caused serious loss to some of the market gardeners. We call it the "Green-corn Worm," as that is the name given it near New York, but, singularly enough, according to Prof. Riley, it is the same insect that does so much mischief in the Southern States, attacking the very young cotton bolls, and is there known as the "Boll-worm." In some parts of the country it is a great enemy to the tomato crop, eating into and spoiling the green fruit, and in some places has injured the squashes when they are very young. The name of the insect is *Heliothis armigera*, the parent insect is a clayey yellow moth with a greenish tint. This lays its eggs upon the corn silk, and the young caterpillar soon makes its way to the interior of the ear, where it riots upon the tender sweet kernels, and grows with great rapidity. Mr. K. mentions finding worms of different colors, but they are all the same in different stages of growth. When full grown the caterpillars are green and black. After they have completed their growth



THE GREEN CORN WORM ON A TOMATO.

they descend into the earth, and in three weeks come out as moths. Prof. Riley states that they pass the winter in the moth state, probably in hiding among rubbish or other place of shelter. Our correspondent says that he has about half an acre of corn, early Minnesota, and nearly every ear has one to three of these pests within the husk. There is no remedy after the worm has entered the ear, and the only method of attack that has been suggested is to trap the moth. In the cotton fields many have been caught in plates of molasses mixed with a little vinegar, to attract them. From the fact that the worm was quite common with us about ten years ago, since which we have rarely seen one, and it is probable that some natural enemy keeps it in check. The accompanying engraving shows a partly eaten tomato, with this destructive worm upon it.

A New Name for an Old Plant.—*Funkia* is not a pretty name; the plants so called are pretty and are becoming more popular yearly. No doubt Mr. H. Funk, a German botanist, was deserving of the honor of having his name applied to a beautiful genus, yet let it be kept for botanical uses, and let us have another name for every day, garden wear. So thought Mr. W. Robinson, editor of "The Garden" (London), when he offered a prize for a good English name for *Funkia*. In some books it is called "Day Lily," but there are other plants to which that name belongs. The prize was awarded to the name "Plantain Lily," which was suggested by Mr. Edwin Jackson, near Bangor, North Wales. The name is a very happy hit, as the leaves of the Funkias at once suggest enormous Plantain leaves. We quite agree with Mr. Robinson when he writes: "If plants are not worthy of general cultivation, they may be called by any name. But when we deal with plants which we all admire and wish to grow, then if the Latin name is not a happy and a manageable one, an English name is a necessity." We are glad to get rid of *Funkia*, and welcome "Plaintain Lily," and on behalf of all lovers of flowers thank Mr. Robinson and Mr. Jackson.

The Atlanta Exposition.

A glance at a map of the United States will show that the city of Atlanta, Ga., is very centrally located between the Atlantic Coast and the Mississippi, and between the Gulf of Mexico and a line running from the Chesapeake Bay westward to Southern Indiana. It is in the center of the great cotton States territory. A further glance will show a network of railways, extending out from Atlanta in all directions. It is, therefore, the best point for a general exhibition of the Southern States. Several months ago it was proposed to hold an "International Cotton Exposition" at Atlanta during the coming autumn, to which should be invited everything connected with cotton growing and manufacture, from all parts of our own country, and from other nations. The enterprise gradually came into great favor, and it has now expanded into a General Exposition, to which are invited all other products, not only of the South, but of the whole country, including every product of the soil, all kinds of machinery, implements, manufactures, etc. The Fair will open October 5, and close December 31, and it gives good promise of being the most notable exhibition since the Centennial. It can but have the most beneficial effect upon the industry and prosperity of the entire South, and we hope and believe it will be eminently successful. We have not space now for further description of the arrangements, but all are invited to send to the officers for circulars, etc., giving full particulars.

The leading officers are: JOSEPH E. BROWN, *President*; H. J. KIMBALL, *Director General*; JOHN W. RYCKMAN, *Secretary*; SAMUEL M. INMAN, *Treasurer*. Address all, Atlanta, Ga.

Premiums at Fairs--Books and Journals.--As the premium lists come in we are gratified to see that the custom is increasing of offering as prizes a year's subscription to the *American Agriculturist*, or other journal, and books treating of subjects for which the premium is given. In county and local fairs, the prizes given are never very large. The prizes for the smaller articles are from $1 to $3, and rarely reach $5. If a farmer exhibits unusually fine carrots or cabbages, he may get $1 or $2 as a premium. If, instead, he should receive Henderson's "Gardening for Profit," it would open up to him methods of cultivation of which he had no idea, and, if wide awake, and living near a manufacturing town, it might put him on the way of vastly increased income from his farm. So with the good woman who takes a premium for her butter; if, instead of the $1 greenback, she could receive "Keeping One Cow," the hints there given might be worth several dollars. Then there is hardly any department at the fair, when the schedule offers from $1 to $5, where a year's subscription to the *American Agriculturist* might not be worth to the one who receives it much more than the largest of these sums. If one receives for his premium a few dollars, it will be spent in a few days, and no more thought about it. If the prize is the *American Agriculturist*, it will each month remind him of the fair, and renew the feeling of gratification at his success, but the reading of the journal cannot fail to be of great help to him in his farming, and the better prepare him to take other premiums next year. Of course we cannot advise managers of fairs to offer books and journals without appearing to do so from a selfish motive. We are selfish in the wish to extend our circulation, but we plead not for ourselves alone, but for all useful journals.

N.B.—The "Trichine Tester" underwent so many changes and improvements, after it was first offered, that the price was necessarily advanced from $2.50 to $3, which will be the cost hereafter. This includes prepayment of postage.

"Hulling" Sweet Corn.—A correspondent, "F. C.R.," Windsor County, Vt., sends a discovery of his to which he has given the above title. The ear of sweet corn is held in the left hand, and with a common apple knife, or other square-pointed knife, in the right hand, each row of kernels is slit through the middle by running the point of the knife down the whole length of the row. The kernels being all slit, the knife is turned, and its back used to scrape out the contents of the kernels, which will leave the empty hulls firmly attached to the cob. Mr. R. speaks highly of this method for those with imperfect teeth, as excellent in preparing corn for drying, for succotash, etc. We can fully endorse all that he says in its praise, having known of its use for the last fifty years. Among the earliest recollections of the writer is that of seeing his father cut the corn in precisely the same way. Still this does not detract from the merits of the discovery, or lessen our obligations to Mr. R. for a full description, with an excellent drawing to show how to hold the corn. Our friend is not aware that there is an implement sold in the house-furnishing stores for accomplishing the same thing. This cuts several rows at a time, and would be very useful were it substantially made. Being a cheap affair of tin, it has not come into general use, as it would have done had the idea been carried out in a more durable material.

Sugar from Rags.—It is said that there are factories in Germany engaged in making sugar from rags on a large scale. There is nothing surprising about this; rags, whether of cotton or linen, are simply vegetable fibre. If properly cleaned from all foreign matters, there is no reason why they should not yield sugar as readily as saw-dust or corn starch, as these articles are chemically the same. But the sugar produced from rags, will be *glucose*, precisely like that from starch. While cane sugar may be readily converted into glucose, or grape sugar, no one has yet been able, by chemical or other means, to produce cane sugar from glucose.

Rules for Right Living.

BY MRS. E. H. LELAND, AUTHOR OF "FARM HOMES, INDOORS AND OUT-DOORS."

1. Keep the body clean. The countless pores of the skin are so many little drain-tiles for the refuse of the system. If they become clogged and so deadened in their action, we must expect to become the prey of ill-health in some one of its countless forms. Let us not be afraid of a wet sponge and five minutes brisk exercise with a crash towel every night or morning.

5. Devote eight hours out of the twenty-four to sleep. If a mother is robbed of sleep by a wakeful baby, she must take a nap sometime during the day. Even ten minutes of repose strenghtens and refreshes, and does good "like a medicine." Children should be allowed to sleep until they awake of their own free will.

3. Never go out to work in early morning in any locality subject to damps, fogs, and miasms, with an empty stomach. If there is not time to wait for a cup of coffee, pour two-thirds of a cup of boiling water on two teaspoonfuls of cream, or a beaten egg, season it with salt and pepper and drink it while hot before going out. This will stimulate and comfort the stomach, and aid the system in resisting a poisonous or debilitating atmosphere.

4. Avoid over-eating. To rise from the table *able* to eat a little more is a proverbially good rule for every one. There is nothing more idiotic than forcing down a few mouthfuls, because they happen to remain on one's plate, after hunger is satisfied, and because they may be "wasted" if left! It is the most serious waste to over-tax the stomach with even half an ounce more than it can take care of.

5. Avoid foods and drinks that plainly "disagree" with the system. Vigorous out-door workers should beware of heavy indigestible suppers. Suppers should always consist of light easily-digested foods—being, in the country, so soon followed by sleep, and the stomach being as much entitled as the head to profound rest. The moral pluck and firmness to take such food and no other for this last meal of the day can be easily acquired, and the reward of such virtue is sound sleep, a clear head, a strong hand, and a capital appetite for breakfast.

6. Never wear at night the undergarments that are worn through the day.

7. Cultivate sunlight and fresh air. Farmers' wives "fade" sooner than city women, not alone because they work harder and take no care of themselves, but because they stay so closely in-doors, and have no work or recreation that takes them out into the open sunlight. It is a singular fact that women in crowded cities generally get more sunshine and pure air than their hived-up country sisters.

8. Have something for the mind to feed upon—something to look forward to and live for, beside the round of daily labor or the counting of profit and loss. If we have not any talent for writing splendid works on political economy or social science, or the genius for creating a good story or a fine poem, the next best thing—and in fact almost as good a thing—is to possess an appreciation of these things! So have good books and good newspapers, and read them—if only in snatches—and talk about them at dinner-time or by the evening fire. Cultivate choice flowers and fruits, and help some poor neighbor to seeds and cuttings, or take an interest in bees, or fine poultry, or trout-culture. And study always farm and household science, and take advantage of the new and helpful things that are every little while coming to light.

9. LIVE IN PEACE! Fretting, worrying, fault-finding, borrowing trouble, giving away to temper and holding, long, bitter grudges—all these things affect the liver, poison the blood, enlarge the spleen, carve ugly lines on the face, and shorten life! Try to be half as wise as that little creature, the bee, who takes all the honey she can find, and leaves the poisons to themselves.

Live-Forever as a Weed.—"A. J. S.," Sand Lake, N.Y., writes that Live-forever (*Sedum Telephium*) has established itself in his meadow and is spreading, and asks what can be done to stop it. The first thing to do is to prevent its spreading by seed, hence the tops should be cut as soon as they run up to flower. With us it is not yet in flower, but it usually blooms in July. If no seeds are yet formed, cut off the tops, and gather and throw them on a brush fire. Stopping the ripening and scattering of seeds will be a great point. The plant is so tenacious of life that every piece of stem and bit of root will grow. If the clumps are not too numerous they may be smothered. Cover each clump with a heap of something that will completely shut it out from light and air. Straw, swale hay, sawdust, small stones, or whatever else may be at hand that will completely smother it. If the weed has already multiplied to an extent to make this impracticable, then the meadow must be taken up. We would suggest growing successive crops of buckwheat upon it; we do not know that this will smother out the plant, but think it worth trying. We are quite sure that a few crops of the Southern cow pea will kill it. Will any who have succeeded with this tenacious pest, tell our friend and others of some better plan?

Sheep Raising in Mexico.

[The following letter from "W," an English gentleman who has resided for a number of years in the State of Zacatecas, Mexico, is interesting as showing the condition of sheep husbandry in that country. It also illustrates the manner in which the people of Mexico, whether natives or foreign residents, look towards the United States for any expected improvement.—ED.]

Some of the Middle and Northern States of Mexico are admirably adapted to sheep husbandry. Many haciendas (farms) here, have a stock of 80 to 100,000 head of sheep—and several even a greater number. One hacienda, Sicora Hermosa, clipped about 250,000 head last year. But what is most singular, they are all common Mexican scrub sheep, giving about 28 ounces wool all round yearly—or about 14 ounces at each clip. They clip here in March, and again in September. Some few owners only clip once, in September, as sometimes we have heavy hail storms in March and April, which, if coming down upon a newly clipped flock—generally kills about the half—often the whole flock.

I made inquiry regarding if they never thought of improving their flocks, crossing them with Merinos—but I found a great prejudice against Merino sheep. Some few had used some grade bucks, sent down from Texas (in general coated with scab), had been pleased with the first cross, but attempting to breed from that, the sheep had gone back to just where they were again.

One gentleman I met near Zacatecas, a foreigner, told me he had a small flock of grade Merinos, and he does not see why they should not do as well in this country as any other, only that they require more care than the common Mexican sheep, and as the natives are dead against anything new, he was beset with difficulties at first. He tells me his bucks clip about 10 to 12 lbs., ewes 5 to 7, but he never wishes to have anything to do with common sheep again, of which he has had some ten years' experience on a comparatively large scale, running from 12,000 to 15,000 head. He told me he would gladly pay $100 for a ram could he obtain "thoroughbreds," and hoped before long to make importations by rail so soon as our Republic and Mexico would be joined by the railroads now in process of construction all over this Republic.

I found this gentleman had quite a number of books upon sheep husbandry, amongst others the "Vermont Breeder's Register" for 1879, which he greatly prized. He assured me that so soon as these thoroughbred rams were introduced into Mexico and fairly tried, there would be a tremendous demand for that stock.

A few years since he could not sell a pound of his Merino wool at any price, now he is getting $1 more for it an *arroba* (25 lbs.) than for common wool, and there is quite a demand for it amongst woollen mills, which, as a rule, are owned by foreigners.

The climate in this country is superb—the thermometer seems to stick at 62° all the year round.

ONLY ONE

PREMIUM:

BUT A FINE ONE.

It was intended to withdraw, on September 1, all premiums hitherto offered. But the New STRAWBERRY (**Bidwell**), has proved so valuable; its multiplication has continued so favorably; and it is so desirable for all our readers to get plants out and growing this year, that the Publishers have arranged to continue the offer of plants during September, as they can be put out during all this month. But it is desirable to get them into the ground as early as possible, to secure much fruit next season. The pot-grown plants, which are sent with their ball of earth unbroken, carefully packed in baskets, while a litte more costly for packing and transportation, are preferable, as they can be set in the ground with undisturbed roots, and go right on growing and multiplying, and be ready for pretty full fruit next year. Layers sent by mail, if set early in good soil, will generally multiply somewhat now, and fruit somewhat next year—depending upon the location, and the autumn weather. The plants can be sent safely to any part of the United States or Territories; but the expense of expressage will in most cases make it expedient to send plants by mail to very distant points, as on the Pacific Coast. Every one can best learn at the nearest express office, as to the cost of expressage for a basket-parcel of the plants, one easily handled, and then choose the kind of plants accordingly.

(* The regular price of the plants, when not sent as premiums, is $1 per dozen. The plants sent by mail are prepaid; the pot-grown plants are sent by express, the carriage to be paid by the receiver.)

SPECIAL PREMIUM.

A.—**For $1.50,** The *American Agriculturist* will be mailed 12 months to any address, and the sender will be **presented** with **One Dozen** BIDWELL STRAWBERRY PLANTS, to be sent by mail, or (the pot grown) by express, as desired (see * above). **N.B.**—By adding 20 cents extra on each subscription, the paper will be sent from October 1881 to December 1882 (or 15 months).

B.—For **three** subscriptions sent as above (**A**) by one person, 9 extra plants will be added (making 45 in all); all plants must go in one parcel to one address.

C.—For **five** subscriptions sent as above, by one person, 20 extra plants will be added (80 in all) to go in one parcel to one address.—Any **additional** names over five, plants in the same proportion (at the rate of 80 plants for five subscriptions.)

* * The offers **B.** and **C.** are based on less cost for * plants and packing, when sent in parcels of 50, or 100 and upwards. The plants are packed and forwarded for us, by Mr. E. P. Roe, whose successful care and skill in this are everywhere known.

American Forestry Abroad.—That great interest is felt abroad in all that relates to American Forestry is shown by the publication in a recent printing of "The Gardener's Chronicle" (London) of the portraits of three of those most actively engaged in gathering statistics on our forestry for the census. The picture occupies a full page of the "Chronicle," and includes, besides the Chief of the Forestry Department of the Census, Prof. Chas. S. Sargent, of Harvard; Dr. George Engelmann, of St. Louis, the great authority on the Coniferæ, or Pine Family, and Mr. Frank Skinner, Secretary. It may be stated that these gentleman have spent

some months in exploring the forests of the Pacific Coast and other points of the far West, and have returned with valuable specimens and useful material. It is pleasing to know that our friends on the other side of the Atlantic recognize the importance of the work that is being done by Prof. Sargent and his associates.

Bees and Grapes.—While many assert that bees greatly injure grapes, others declare that it is impossible for the honey bee to rupture the skin of the grape, and that whenever bees are found feeding upon the juice, it is only when the skin has been previously broken by wasps. Without attempting to decide whether or not the bees are equally guilty, Mr. J. Simmons, Pottsville, Pa., sends us his remedy against all the insects that prey upon the fruit. After having lost about half of his crop of the "Salem," he found, after a trial of two years, that by putting small bunches of Tansy, the fresh herb, about a yard apart along his grape trellis, or arbor, that the insects are driven off, and his fruit is untouched.

Railway Horse-Powers supply the most compact and convenient method of utilizing the power of horses for almost all kinds of farm machinery, from churning, turning grindstones, wood sawing, feed cutting, up to threshing grain. The former objection that they were hard upon the horses, is mainly obviated by many recent improvements, among which are lightening the track weight, using larger and firmer wheels, and smoother chilled bearings, thus lessening friction. Gearing the bottom as well as the top of the track to the power-wheel does away with the former jerky motion, so wearing both to the animals and machinery. Lessening the inclination of the track puts the animal in a more natural condition. These and other improvements are claimed for the Union Horse-Power Machine made by Messrs. W. L. Boyer & Co.

The N. C. Fruit Growers' Association has prepared and sent out to the various fruit growers in the State, circulars of inquiry to be filled up and sent to the Secretary. These inquiries are framed with a view to draw out experience on all important points relating to each kind of fruit. When the replies are properly digested, they can not fail to be of great value to the people of the State, as well as to those who propose to emigrate to it. The Secretary of the Association is S. Otho Wilson, Raleigh.

The American Veterinary College.—The announcement of this institution is at hand; the course will commence next month, and full particulars may be learned by addressing the Dean of the Faculty, Dr. A. Liautard, at the College. This gives us an opportunity to say that the career of a veterinary surgeon is one of great promise to those who are properly fitted for it. A young man whose tastes naturally incline him towards the medical profession, may well consider whether, as a veterinary surgeon, he may not attain greater eminence than to enter the over-crowded ranks of the M.D.'s. That he can sooner be successful in a pecuniary sense we do not doubt. Veterinarians have already made for themselves a scientific position, and are no longer ranked as "cow doctors." All over the country there is a demand for skilled veterinarians, and it is because these are not at hand that the practice falls into the hands of the uneducated and the unskilled. It is a thoroughly honorable profession, and the field it opens for distinction, in the way of making new investigations and new discoveries, is vastly wider than in the regular medical ranks. There are several good schools, the name of one of which we have here given.

Crops in New York State.—The State Agricultural Society has 240 reports from 54 of the 57 counties, on the state of crops August 1.—Of 227 reports on CORN, 119 say "Poor"; 33 "Very Poor"; 53 "Average;" 16 "Good;" only 6 "Very Good."....WHEAT: 22 counties report estimated average yield per acre, 20 bushels; 4 of 21 to 22 bush.; 2 of 25 to 26 bush.; 2 of 27 bush. (the highest); 6 of 19 bush.; 9 of 18 bush.; 6 of 17 bush.; 2 of 16 bush.; 5 of 15 bush.; 1 of 14 bush.; and 1 (Dutchess) of 10 bush.—The 15 N. W. counties, Erie to Onondaga (the "Genesee" Wheat region) report an average of 19 bush. The 10 counties eastward, Oswego, Cortlandt, etc., to Herkimer, 18½ bush.....HAY and Pasturage, generally "Very Good" or "Good" throughout the State. POTATOES, generally reported "Average" to "Very Good." ...APPLES are reported "light crop" in Monroe and Yates counties, and "Very light," or "almost no crop" in Oneans, Wayne, Seneca, Ontario, Schuyler, Oswego, and Greene counties.

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SILOS AND ENSILAGE.

There is a great demand for Dr. Geo. Thurber's New Volume alluded to elsewhere, on "Silos and Ensilage." It gives all the desired information on the preservation of fodder corn, and other green fodder crops by the new process. The illustrations add greatly to the value of the Book. It it sent, Postpaid, for the nominal sum of 50 cents.

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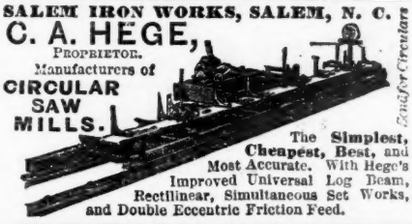

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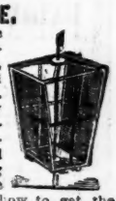

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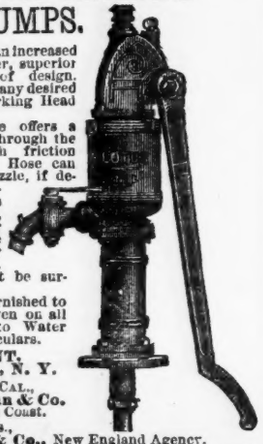

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